

**BIRTH AFTER CAESAREAN:
AN INVESTIGATION OF DECISION-MAKING FOR MODE OF DELIVERY**

by

Sarah Munro

B.A. (Hon.), The University of British Columbia, 2005

M.A., The University of British Columbia, 2007

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Abstract

Background: Clinical practice guidelines indicate that over 80% of women with a previous caesarean should be offered a planned vaginal birth after caesarean (VBAC), however only one third of eligible women choose to plan a VBAC. Shared decision-making (SDM) interventions support women to make choices based on their informed preferences. To facilitate implementation of SDM it is necessary to understand the patient (micro), health services (meso), and policy (macro) factors that influence decision-making.

Objectives: My objective is to explore attitudes toward and experiences with decision-making for mode of birth after caesarean section in British Columbia (BC) to identify factors that influence implementation of SDM.

Methods: In-depth, semi-structured interviews were conducted with women eligible for VBAC, care providers, and health service decision makers recruited from three rural and two urban BC communities. Integrated knowledge translation (iKT) principles guided study design, while constructivist grounded theory informed iterative data collection and analysis. Findings were interpreted using complex adaptive systems theory (CAS).

Results: Analysis of interviews (n=57) and CAS interpretation revealed that the factors influencing decisions resulted from interactions between the micro, meso, and macro levels of the health care system. Women formed early preferences for mode of delivery (after the

primary caesarean) through careful deliberation of the social risks and benefits of mode of delivery. Physicians acted as information providers of clinical risks and benefits, with limited discussion of patient preferences. Decision makers serving large hospitals revealed concerns related to liability and patient safety. These stemmed from limited access to surgical resources, which had resulted from budget constraints. To facilitate mutual understanding among stakeholder groups, iKT activities included policy dialogues and the creation of a policy brief.

Conclusion: To facilitate the effective implementation of SDM in clinical practice for mode of delivery after a previous caesarean section, it is necessary to address the needs of women, care providers, and decision makers. These include initiating decision support immediately after the primary caesarean, assisting women to address the social risks that influence their preferences, managing perceptions of risk related to patient safety and litigation among physicians, and access to surgical resources.

Preface

This dissertation was conducted under the primary supervision of Dr. Patti Janssen and Dr. Jude Kornelsen (University of British Columbia), and co-supervision of committee members Dr. Nick Bansback (University of British Columbia) and Dr. Kitty Corbett (University of Waterloo)

I, Sarah Munro, designed and conducted the study and wrote all the chapters in this dissertation. I incorporated feedback from committee members into the final draft.

This study was approved by the University of British Columbia Behavioural Research Ethics Board (H15-00319), Fraser Health Research Ethics Board (FHREB 2015-032), and Northern Health Research Review Committee (RRC H 2015-001).

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List of Abbreviations

ACOG: American College of Obstetricians and Gynecologists

CAS: Complex adaptive system

FHA: Fraser Health Authority

GPESS: General Practitioners with Enhanced Surgical Skills

iKT: Integrated knowledge translation

KT: Knowledge translation

KTA: Knowledge to Action

NHA: Northern Health Authority

PtDA: Patient decision aid

SDM: Shared decision-making

SOGC: Society of Obstetricians and Gynaecologists of Canada

VBAC: Vaginal birth after caesarean

Glossary

Agency: A woman's account of her capacity for individual thought and action. This is a term commonly used in feminist theory.

Complex adaptive system: "A collection of individuals with freedom to act in ways that are not always totally predictable, and whose actions are interconnected so that one agent's actions changes the context for other agents."(1)

Comprehensive risk: "An extended definition for risk for the health system that considers the full range of risks and their interactions."(2) Comprehensive risk involves two core categories: health services risks and social risks. "Health services risks" involve clinical risks, as well as legal, political, operational, and financial risks to the health system. "Social risks" involve cultural risks (to patients' traditional values and spirituality), emotional risks (of system-initiated distress to patients), and financial risks (of compromised family budgets in accessing health services).

Engaged scholarship: "A form of collaborative inquiry between academics and practitioners that leverages their different perspectives to generate useful knowledge."(3)

Implementation: "The process of putting to use or integrating evidence-based interventions within a setting."(4)

Informed choice: A model of decision-making in which the care provider gives information on clinical risks and benefits to the patient, who then makes a decision on their own.

Informed consent: The principle that patients have the right to be informed of their options, to agree voluntarily to a healthcare decision, and that the decision should respect the wishes of the patient.(5)

Integrated knowledge translation (iKT): A process of engaging with stakeholders throughout the research process to co-produce knowledge and facilitate its implementation in policy and practice. iKT helps to identify facilitators and barriers to the process of evidence implementation, provide empirical evidence to support health service planning, and through the partnership process itself is instrumental in implementing sustainable change.

Knowledge: The "knowledge" in integrated knowledge translation may be defined as *evidence in context*. Evidence may be "research-based findings transparently compiled, analysed and interpreted according to rigorous methodological processes and standards,"(6) while context refers to "the conditions or surroundings" in which evidence exists, "typically referring to an analytical unit that is higher than the phenomena directly under investigation."(7) These conditions or surroundings may include practical wisdom, lived experience, and social norms.

Knowledge exchange: “A fluid, dynamic process involving the proliferation and reinvention of ideas drawn from many different sources via an interactive, interpretive process.”(8)

Knowledge partner: Individuals who are likely to use research results to make informed healthcare decisions about practices and policies. In this study, they included childbearing women, their families, care providers, and health service decision makers at the hospital, regional, and government level.

Knowledge translation: “A dynamic and iterative process that includes synthesis, dissemination, exchange and ethically sound application of knowledge to improve the health of Canadians, provide more effective health services and products and strengthen the health care system.”(9)

Knowledge to Action (KTA) cycle: A conceptual framework that was developed by researchers and members of the Canadian Institutes of Health Research following a review of 31 planned action theories.(10) It conceptualizes knowledge to action as a fluid and dynamic process that vacillates between “Knowledge Production” and an “Action Cycle.”

Micro, meso, and macro health system levels: A framework for conceptualizing the different actors and organizations in a health care system. The micro-level of the health system involves individuals in clinical and social encounters, including patients, their families, and care providers. The meso-level of health services includes the hospitals, organizations, communities, social networks, and regions in which individuals act. The macro-level includes the policy, cultural, and governmental context of health services. Decision-making for birth after caesarean may take place at the micro-level between individuals in clinical encounters. At the meso-level, it may involve decisions by hospitals to provide health services and resources to support vaginal and caesarean birth. At the macro-level, it may involve system-wide processes, policies, or cultural behaviour that influence the system as a whole, such as clinical practice guidelines or financial incentives for physicians.

Patient decision aids: Evidence-based tools that provide patients with individualized information on the clinical risks and benefits of their health care options, highlight uncertainties about the evidence, and help individuals to clarify their values and preferences. Patient decision aids can be used *independently* by the patient, *shared* face-to-face with a care provider during a clinical encounter, or *mediated* via telephone or other media, such as with a decision coach.

Shared decision-making: A model of decision-making, in which the care provider gives information on clinical risks and benefits to the patient, supports the patient to gain clarity about their values, listens to the patient’s personal health goals, lifestyle concerns, and how these align with standards of care, and engages with the patient to make a shared decision for a course of care.

Stakeholder: Individuals and organizations involved in receiving, providing, or planning care, including patients, care providers, and health service decision makers. Stakeholders in this study are those who may be affected by decisions for birth after caesarean, or whose behaviours and actions may have an effect on efforts to support SDM for birth after caesarean.

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Dedication

For Amy

Chapter 1: Introduction

In British Columbia, the caesarean section rate has been steadily on the rise since the 1990s. One key reason for this trend is an increase in repeat caesarean sections, which have risen by more than 10% over the past 10 years and account for one-third of all caesareans in the province.⁽¹¹⁾ In 2012-13, 82.4% of BC women with a previous caesarean were eligible to attempt a vaginal birth after caesarean (VBAC); however, only 32.7% of these women attempted a VBAC with the remainder giving birth by elective repeat caesarean.⁽¹²⁾ Among those women who did attempt a VBAC, 70.9% had a vaginal birth as planned.⁽¹²⁾ The Society of Obstetricians and Gynaecologists of Canada (SOGC) guidelines recommend offering VBAC to eligible women.⁽¹³⁾ Since the publication of these guidelines in 2005, the repeat caesarean rate has continued to rise in British Columbia, demonstrating a clear gap between best evidence and practice.

Conventional models of informed consent frame the process as individualistic, involving one patient and one care provider. In this context, the aggregate evidence on medical risks and benefits of different modes of delivery are discussed before patient values and preferences are considered.^(14,15) This paradigm does not consider the wider constellation of factors that influence choice.^(16,17) From a health services perspective, issues of access can limit patient choice, such as in the event of a rural hospital having a policy of not offering planned VBAC or caesarean deliveries.⁽¹⁸⁾ In health care systems that provide financial incentives for obstetricians to perform caesarean sections, “physician induced demand” can increase rates of repeat caesarean section.⁽¹⁹⁾ Thus the development and dissemination of best evidence does

not guarantee that providers and decision makers will be willing or able to support patients to make informed choices for birth after caesarean. Given the health system emphasis on patient choice, insights about rising repeat caesarean rates will likely be embedded in decision-making for mode of delivery.

Graham et al's Knowledge-to-Action (KTA) cycle, a framework for moving evidence into practice informed by planned-action theories, stresses that uptake of evidence based practices may be influenced by issues related to the quality and appropriateness of the evidence, stakeholders' attitudes and experiences with the practice, and the context or setting in which the evidence is to be used.(20) Adapting evidence to local context improves adherence to and acceptance of the evidence and may create sustained changes in clinical practice through a sense of shared ownership over the evidence.(21,22) In order to bridge this knowledge to action gap, in addition to clinical evidence, it is necessary provide patients and clinicians with knowledge on VBAC and repeat caesarean that is informed by an understanding of stakeholders' attitudes toward and experiences with birth after caesarean, and the health services and policy context in which decision-making takes place. Through this study I aim to address this gap in the literature by exploring the perspectives of different stakeholder groups to determine the factors that influence implementation of best practices for birth after caesarean decision-making in the local context of British Columbia, Canada.

In this introductory chapter, I describe the background, purpose, objectives, and significance of my dissertation research. I also define the key theories and terms used

throughout the dissertation. At the end of the introduction, I give a short overview of subsequent chapters.

1.1 Background

Findings on women's attitudes toward and experiences with mode of delivery vary by jurisdiction and illustrate that context influences decision-making. A systematic review and meta-analysis of 38 international quantitative studies involving 19,403 women found that caesarean preferences vary by setting.(23) Women in North America express a greater preference for caesarean (21.3%; 95% CI 16.4-26.7) in comparison to women from Australia (13.8%; 95% CI 2.0-33.6) and high-income countries in Europe (11.0%; 95% CI 7.6-15.0).(23) Women with a previous caesarean (n=4,010, 16 studies) overwhelmingly prefer planned VBAC for mode of delivery after caesarean, with less than one third expressing a preference for repeat caesarean (29.4%; 95% CI 24.4-34.8).(23) In a separate systematic review of 11 studies on women's preferences for mode of delivery after caesarean, Eden *et al* found that ethnicity influenced attitudes and experiences.(24) Nonwhite women were more likely than their white counterparts to cite their care provider as an important influence (39% vs. 19%) and to wish to avoid labour if another option resulted in a healthy baby, in comparison to white women who valued the experience of labour.(24)

While there are geographic and ethnic differences in decision-making, qualitative studies have also identified similarities in women's experiences of choosing mode of delivery. Women feel a moral obligation to make the "right" choice based on the perception that they

are the primary decision maker and are consequently responsible for the outcome of their decision, in particular with regard to concern about the potential for bad outcomes for their baby.(25,26) By allowing another person (e.g. care provider, partner) to make the decision on their behalf, women may feel relief and comfort at no longer experiencing the responsibility associated with being the primary decision maker.(27) Further, women birth after caesarean preferences are often based on the social needs of their family, such as the need for a short postpartum recovery in order to care for their partner and other children, rather than on medical risks and benefits their baby or their selves.(24)

Two qualitative studies involving postpartum interviews with women who gave birth after caesarean in northern England (25,28) found that, in the absence of accurate, trustworthy, and complete information from their care provider, women rely heavily on knowledge from their previous birth experiences, which are frequently characterized by feelings of unhappiness, regret, and blame, as well as fears of being physically incapable of having a vaginal birth. Lack of knowledge of medical risks and benefits may result in women choosing elective repeat caesarean. In 2014 Scaffidi *et al* surveyed a convenience sample of 45 American women with a history of previous caesarean birth and found that those women who had high knowledge of their birth after caesarean options were more likely to choose VBAC than repeat caesarean (OR 3.9; 95% CI 1.09-13.81).(29) In this context, maternity care researchers Gee and Corry recently stated in an *Obstetrics and Gynecology* editorial that “Given the dearth of information women have about their medical choices, more investment is needed in patient education and tools for shared decision making in clinical settings.”(30) This evidence

suggests that, in order to bridge the evidence to practice gap for mode of delivery after caesarean, it is important to understand women's attitudes and experiences in different health system contexts, including women's misperceptions and misinformation related to VBAC, what information they use to make their choice, and what they perceive to be the barriers and facilitators to VBAC in their communities. No study has explored women's perceptions of health system factors that influence decision-making for birth after caesarean.

There is emerging literature on care providers' attitudes toward and experiences with mode of delivery after caesarean.(26,31–34) Cox conducted semi-structured interviews with obstetricians and midwives (n=24) in Florida and found that fear of liability and the convenience of repeat caesarean delivery were the central reasons why providers avoided VBAC deliveries, particularly in rural and community hospitals.(31) Midwives were more supportive of VBAC deliveries than their obstetrician counterparts, but felt marginalized from being able to participate in VBAC births due to hospital policies. In contrast, in a UK study involving semi-structured interviews with midwives and physicians (n=25), Kamal et al. found that both care provider groups supported VBAC deliveries but midwives and physicians also felt that the evidence base underpinning VBAC guidelines was of poor quality and secondary to professional experience.(32) Further Kamal et al. observed wide variation in care providers' decision-making styles, which they described as ranging from "consumerist" (patient decides), to "mutualistic" (shared decision), to "paternalistic" (provider decides).

Such care provider attitudes and experiences may effect the uptake of evidence-based practices and decision-making for mode of delivery after caesarean. One UK study evaluated

the use of evidence-based, informed choice leaflets on decisions in maternity care, using observation of 886 antenatal consultations in 13 maternity units in Wales and 383 in-depth interviews with women, midwives, and obstetrical specialists.(35,36) Qualitative analysis revealed that care provider attitudes and time constraints were barriers to the use of the KT tools. Informed choice was not promoted in the study setting due to care providers' belief that certain choices, such as elective caesarean for breech presentation, are more "clinically secure" and would afford them protection against litigation. These factors contributed to a culture of patient compliance with care providers' recommendations. This previous work also indicates that patient-oriented tools help women to become informed about their choices for birth after caesarean, but may be insufficient to support women to actualize their informed decisions in partnership with their care team.

In addition to patient and care provider attitudes and experiences, health service and policy factors influence decision-making for mode of delivery. A 2012 survey of all California maternity hospitals (n=243) found that 139 hospitals in the state offered VBAC services (53%), predominantly urban hospitals and/or had 24/7 anaesthesia coverage and/or an in-house obstetrician.(37) These findings illustrate that health service decisions on whether or not to provide continuous caesarean section back-up further influences patient decision-making by limiting the mode of delivery options available to women. In Australia, a prospective multi-centre randomized controlled trial involving 227 women tested the impact of a patient decision aid on decision-making for mode of delivery after caesarean and found that women's preferences for mode of delivery were not consistent with actual birth outcomes.(38) Rather

the hospital site at which women gave birth was the variable that predicted whether or not patients planned a vaginal delivery. Low VBAC rates in one of the two study sites may have been the result of “organizational culture and clinical practice patterns” (38) characterized by health care provider resistance to VBAC and unsupportive hospital policies.(39) These findings suggest that patient VBAC preferences are honoured only in settings that have supportive infrastructure, resources, and policies.

Exploration of health service decision makers’ attitudes and experiences may provide insight into why health services do not provide the resources necessary to fulsomely support women’s choice of options for mode of birth after caesarean. These systems level factors have not been explored in the literature, which has focused to date primarily on the decision-making experiences of individual women and more recently on the attitudes of care providers toward VBAC.(31–34) Without identifying and addressing these health systems issues, efforts to support women’s decision-making will likely be unsuccessful.

1.2 Purpose of the Dissertation

This research aims to expand the decision-making paradigm beyond the patient-provider dyad and explores the influence on women of family members, peers, and cultural groups, as well as the influence on care providers of colleagues, health service decision makers, and professional organizations and colleges. I aim to produce locally-derived knowledge on the factors that influence decision-making within different health service settings and patient populations to facilitate the development and testing of tailored interventions to support women’s informed

choice of mode of delivery after caesarean. To that end, in this dissertation, I explore attitudes toward and experiences with decision-making for mode of birth after caesarean to identify the factors that influence decision-making for mode of delivery. Specifically, my objective is to explore the following descriptive research questions.

1. What are women's attitudes toward and experiences with mode of delivery after caesarean in British Columbia?
2. What are care providers' attitudes toward and experiences with providing care for women considering mode of delivery after caesarean in British Columbia?
3. What are decision makers' experiences with planning services for birth after caesarean in British Columbia?

These research questions emerged from a review of the literature on the factors that influence decision-making for birth after caesarean (Chapter 2). Following principles of "integrated knowledge translation,"(3,9) the research questions were also informed by discussions with knowledge partners in one region of British Columbia, Fraser Health Authority, where optimizing services for birth after caesarean is a key health services and policy objective.

Integrated knowledge translation (iKT) is rooted in the paradigms of participatory research and engaged scholarship. It stresses the importance of having researchers engage with the stakeholders who will use research results and leverage their different perspectives to create knowledge that is more relevant, useful, and usable.(40) iKT stems from a recognition that academic research results may not be easily transferable into practice and policy due to various barriers: the need for resources to support implementation of evidence, the complexity

of changing clinicians' and policy makers' beliefs and behaviour, the importance of fit between the research context and the setting where research is to be implemented, timelines for policymaking, and the perceived credibility of research findings.(41,42) Research results may be more relevant to stakeholders if the research questions respond to problems they have identified and the movement of knowledge is bi-directional between researchers and stakeholders.(3)

In this dissertation research I engaged with patient, care provider, and decision maker stakeholders with the objective of facilitating the co-production of knowledge and uptake of study findings to support women's decision-making for birth after caesarean. I describe this process in detail in Chapter 7. Stakeholders refers to individuals and organizations involved in receiving, providing, or planning care for birth after caesarean, including patients, care providers, and health service decision makers. Throughout the dissertation I use the term "knowledge partners" to describe the stakeholders who actively engaged in the study as participants, expert informants, or research collaborators.

1.3 Conceptual Framework

This dissertation research is underpinned by a number of assumptions, which I introduce briefly here before describing in detail in the sections below. First, I proceed with the assumption that the optimal model of decision-making for birth after caesarean is "shared decision-making" (SDM). In SDM health care providers and patients exchange information to understand the medical risks and benefits of health care options, reveal their values and preferences, and

jointly decide on a treatment strategy that incorporates both the clinical evidence and their preferences.(43) SDM is particularly suited for childbirth decisions where there is clinical uncertainty or equipoise, or where the patient has to make trade-offs between the known benefits and harms of each option.(44) For such decisions, the optimal choice depends on the woman and her family's personal values.

Second, I approached this dissertation research through the lens of integrated knowledge translation (iKT). In iKT, as noted above, knowledge partners participate throughout the research process with the aim of co-producing knowledge that is relevant and usable for solving healthcare problems. As described, knowledge partners are individuals who are likely to use research results to make informed healthcare decisions about practices and policies, and in this study include childbearing women, their families, care providers, and health service decision makers at the hospital, regional, and government level. In this study, knowledge partners (including patient advocates, care providers, and hospital and regional decision makers) were involved from the start of the research process and participated throughout, including in defining the problem, selecting methods, recruiting participants, and interpreting findings. I provide a full description of iKT activities in Chapter 7.

Third, my analysis of participants' narratives on decision-making for mode of delivery after caesarean was informed by complex adaptive systems theory. A complex adaptive system (CAS), drawing from Plsek and Greenhalgh's illustrative definition, is a collection of individuals "with freedom to act in ways that are not always totally predictable, and whose actions are interconnected so that one agent's actions changes the context for other agents."(1) As my

dissertation is premised on the assumption that women's decisions for birth after caesarean are influenced by contextual factors and relationships at micro, meso, and macro levels of the healthcare system, CAS is a fitting framework for understanding mode of delivery decision-making and implementation of SDM.

These three concepts share an ontological (and interdisciplinary) perspective that different forms of knowledge are legitimate and valued. Shared decision-making presumes that care providers have expert clinical knowledge while patients are experts on their health and illness experiences. Integrated knowledge translation emphasizes the importance of weaving together knowledge from practical wisdom, community perspectives, professional experience, and research evidence to inform implementation. Complex adaptive systems theory likewise claims that knowledge about a health care system is not located in the narrow perspective of care providers only, but holistically by comparing the perspectives of different agents in the system, of other overlapping systems, and the relationships between them. In the following sections I provide an overview of these concepts and orient the reader to key terms used throughout the dissertation.

1.3.1 Shared Decision-Making

Patient-centred care, following the Institute of Medicine's definition, is "respectful of and responsive to individual patient preferences, needs, and values," and it aims to ensure "that patient values guide all clinical decisions."⁽⁴⁵⁾ Shared decision-making (SDM) is said to be the "crux of patient-centred care."⁽⁴³⁾ SDM is distinct from "informed choice" decision-making,

which is a form of non-directive counseling commonly used in Canadian maternity care.(46) In an informed choice model of decision-making, the care provider gives information on medical risks and benefits to the patient, who then makes a decision on their own. SDM, in contrast, also involves eliciting the patient's values, which may involve gaining clarity about the patient's values, personal health goals, lifestyle concerns, and how these align with standards of care. The ideal result of SDM is a quality patient decision, defined as one that is informed, consistent with personal values, and acted upon.(47) Ideally, the quality of the decision should be judged by how well it follows this *process*, not the outcome of the decision. To measure whether a decision is high quality, researchers assess whether the patient was knowledgeable of their health care options, and any risks and benefits; whether the patient's choice reflected what matters most to them; and whether they received the actual health care option that matched their informed values. A quality patient decision for planned VBAC should thus be judged on the decision-making process, not by whether it resulted in a healthy outcome or actual VBAC. "Informed consent," a further concept in decision-making, is the principle that patients have the right to be informed of their options, to agree voluntarily to a healthcare decision, and that decision should respect the wishes of the patient.(5) SDM has been variously described as the ideal approach for achieving informed consent, and as a distinctly separate process.(48)

Criteria for SDM developed by Towle and Godolphin have been developed and tested in various settings and suggest competencies for both the care provider and patient.(49,50) For the care provider, criteria include ascertaining and responding to the patient's values, identifying choices and evaluating the evidence in relation to the patient, and making or

negotiating a decision in partnership with the patient. The patient, in turn, should communicate with the physician to ensure that they understand the research evidence. They should share relevant information about their health problems, feelings, beliefs, and expectations. As a result of this two-way communication, the health care decision is a “meeting of experts,” informed by two sources of equally relevant information.(51)

Légaré and colleagues theorize that SDM extends beyond this patient-provider dyad and is actually an “interprofessional” process influenced by factors at the micro, meso, and macro levels of the healthcare system.(52) In their model, the “actors” involved in the decision-making process include: the patient; the healthcare professional who initiates the SDM process; the health professional who coaches the patient through the decision; family members, surrogates, and significant others; and various other “interprofessional” healthcare providers who encounter the patient throughout their decision-making process.(52) The decision-making process, they posit, is influenced by contextual factors that may include individual behavior, liability concerns, health professional regulations and policies, as well as broader cultural factors, which may include the values and risk attitudes of different health professions, ethnicities, and religious groups.(52) The context of decision-making in maternity care includes an additional layer of complexity because two patients are involved – the mother and her fetus. Childbirth decisions thus may require the woman and her family to make difficult trade-offs that may benefit the mother’s well-being but increase risk to her fetus (and vice versa), which can heighten anxiety and uncertainty in decision-making (e.g. decisional conflict).(53) For instance, in the case of elective repeat caesarean versus planned VBAC, while the absolute risk

of mortality is very small, it is statistically higher for the mother (0.13 vs. 0.04 deaths per 1,000) than the fetus (0.5 vs. 1.3 deaths per 1,000).(54)

To capture the range of “risks” involved in a decision for birth after caesarean, I draw from the concept of “comprehensive” risk developed by rural maternity health services researchers Barclay and colleagues.(2) Comprehensive risk involves two core categories: health services risks and social risks. “Health services risks” involve clinical risks (e.g. adverse outcomes for mother and baby), as well as legal, political, operational, and financial risks. “Social risks” to patients, in contrast, involve cultural risks to traditional values and spirituality, emotional risks of system-initiated distress, and financial risks of compromised family budgets, for instance due to costs they incur in traveling to access health services. Ideally, in SDM these various risks are discussed through information exchange between the patient and her care team. I explore the concept of comprehensive risk further in the Literature Review section of the Dissertation.

In Canada, implementation of SDM has been slow and inconsistent, but there is emerging growing interest in such strategies to promote patient-centred care. The Canadian Institutes for Health Research’s multi-faceted Strategy for Patient-Oriented Research (SPOR) aims to fund research that “engages patients as partners, focuses on patient-identified priorities and improves patient outcomes.”(55) There are also provincial initiatives taking hold. In Saskatchewan, the health ministry “has identified shared decision-making as a key strategic and operational priority... and directed regions to incorporate shared decision-making in their efforts to improve care.”(56) The British Columbia Patient-Centred Care Framework released by the Ministry of Health in February 2015 includes “shared and informed decision-making” as a

component of patient-centred care and describes the development of tools as one of four patient-centred care practices: “The pursuit of patient-centered care can be supported by the development of tools to assist the organization in putting the needs of patients and families at the center of care.”(57) In developing knowledge to explore implementation of SDM for birth after caesarean, I draw from the principles of knowledge translation.

1.3.2 Knowledge Translation

Knowledge translation (KT) is defined as “a dynamic and iterative process that includes synthesis, dissemination, exchange and ethically sound application of knowledge to improve the health of Canadians, provide more effective health services and products and strengthen the health care system.”(9) In this dissertation, I draw on two conceptual frameworks for conducting knowledge translation: the Knowledge-to-Action (KTA) cycle,(20) and integrated knowledge translation (iKT).

The KTA cycle is a widely used KT conceptual framework that was developed by researchers and members of the Canadian Institutes of Health Research following a review of 31 planned action theories.(10) Its development aimed to create clarity around the concepts and key elements in the KT process while providing a flexible “map” that researchers may use to create the bridge between research and action. Integrated knowledge translation (iKT), also known as “engaged scholarship,” furthers this process to engage potential knowledge users throughout the research. While the KTA cycle identifies *what* the key stages are in the KT process, integrated knowledge translation (iKT) offers a perspective on *who* should be engaged

and *how* they might engage. This approach aims to “produce research findings that are more likely to be directly relevant to and used by knowledge users.”(9) This form of KT research is concerned with understanding or harnessing the factors that influence uptake of knowledge in practice and policy. It is related to “implementation science,” which focuses on the development and testing of methods that influence uptake of knowledge in practice and policy, and on studying the factors that influence patient, care provider, and organizational behaviour in healthcare settings.

Conducting iKT research focuses researchers and stakeholders on the same page, identifies facilitators and barriers to the process of evidence implementation, provides empirical evidence to support health service planning, and through the partnership process itself is instrumental in implementing sustainable change.(58) By collaborating with stakeholders from the beginning of a research process, researchers are more likely to integrate their “capital R” research (58) with local, contextual knowledge that “reflect[s] the complexities of the specific environment,” which may include “local evaluation data, population profiles, provider expertise, local resource availability, and patient preferences.”(40)

Consequently, in an iKT research process different forms of “knowledge” are legitimate. The “knowledge” in KT may be defined as *evidence in context*. Evidence may be “research-based findings transparently compiled, analysed and interpreted according to rigorous methodological processes and standards,”(6) while context refers to “the conditions or surroundings” in which evidence exists, “typically referring to an analytical unit that is higher than the phenomena directly under investigation.”(7) These conditions or surroundings may

include practical wisdom, lived experience, and social norms. This expansive definition of knowledge informs my study design – I have sought to generate evidence using rigorous qualitative methods while using iKT strategies to ensure that this evidence is developed and interpreted in a local context in partnership with patients, care providers, and policy makers. This approach also reflects my interdisciplinary doctoral training, in which I wove together traditionally positivist (health services research, population health) and constructivist (qualitative) research paradigms that hold differing perspectives on what knowledge is and how it is created. In analyzing the findings of my dissertation, I continued this approach in choosing a theoretical framework (complex adaptive systems) that explains how context influences the implementation of evidence on SDM for birth after caesarean.

1.3.3 Complex Adaptive Systems

Complexity science is a paradigm commonly used to explain contextual and organizational influences on knowledge translation and to guide implementation of health service innovations. Complex adaptive systems (CAS), such as healthcare, exhibit a number of common characteristics. Their boundaries are poorly defined and membership in the system can change. Stakeholders (e.g. patients, health care professionals, decision makers) can be part of multiple systems at once, such as a primary health care team, professional college, and regional authority. Consequently interactions among the stakeholders and the system, and between the system and its environment, change as the system self-organizes in response to small triggers in non-linear, dynamic, and unpredictable ways. For instance, one woman's experience of uterine

rupture and the death of her baby may be socially-circulated and result in a friend of a friend opting for planned repeat caesarean after she hears the story.

Stakeholders respond to their environments by acting on internalized rules, such as instinct or heuristics, and these rules may look illogical to another agent. “Gain the woman’s informed consent for mode of delivery” might be a rule that the care provider follows as part of their standards of practice. “Do not keep the busy doctor from getting to other patients” might be a rule that a woman adopts during clinic visits.

Finally, each individual and system is nested in other systems that co-evolve together and interact. This co-evolution creates a natural tension and paradox that cannot and does not need to be resolved. It may lead to creative and novel approaches to issues. In the case of birth after caesarean, for instance, two somewhat contradictory assumptions underpin strategic planning. From a population health perspective, one assumption is that the VBAC rate is too low and should be increased to maximize overall perinatal health.(59) From a patient-centred care perspective, one assumption is that women should choose the mode of delivery that reflects their values, preferences, and lifestyle, and thus elective repeat caesarean is a reasonable option for informed women.(17)

In CAS approaches to knowledge translation, such paradoxes between different parts of the healthcare system are natural, necessary, not something to try to resolve through a top-down or outside approach, like a mechanic fixing an engine. Rather CAS theory offers that in the face of tension individuals will interact to create novel behaviors and solutions, more akin to adaptation in an ecosystem. In a healthcare system, the key is to support stakeholders to

engage in “productive interaction” to create mutual understanding of their different attitudes and experiences, and to identify opportunities where policy and practice can be modulated.(60)

My dissertation research supports this productive interaction by first exploring the phenomenon of decision-making for birth after caesarean at micro, meso, and macro levels of the healthcare system, and identifying the interactions between stakeholders (Chapter 4-6). Concurrently, I engaged in iKT activities to encourage mutual understanding of this evidence between different stakeholders (Chapter 7).

Throughout, I use the “micro, meso, and macro levels of the healthcare system” to conceptualize the different actors and organizations that may influence decision-making for mode of delivery after caesarean. The micro-level of the health system involves individuals in clinical and social encounters, including patients, their families, and care providers. The meso-level includes the hospitals, organizations, communities, social networks, and regions in which these individuals act. The macro-level includes the policy, cultural, and governmental context of health services. Decision-making for birth after caesarean may take place at the micro-level between individuals in clinical encounters. At the meso-level, it may involve decisions by hospitals to provide health services and resources to support vaginal and caesarean birth. At the macro-level, it may involve system-wide processes, policies, or cultural behaviour that influence the system as a whole, such as clinical practice guidelines or financial incentives for physicians. This conceptualization is consistent with the concepts of micro-, meso-, and macro-level decision-making used in the Canadian Medical Association’s policy for making choices concerning core and comprehensive health care services.(61)

1.4 Significance of the Dissertation

Research that illuminates the factors influencing implementation of SDM for birth after caesarean has significant implications for maternal and newborn health and wellbeing, and for health system costs. Understanding and “diagnosing” women’s preferences for mode of birth after caesarean is necessary in order to ensure that women plan for their desired birth experience, a core component of patient-centred maternity care. Informed choice decision-making, where the patient alone decides, may lead to “silent misdiagnosis” of patient preferences and poor healthcare choices.(62) In Lee et al’s cross-sectional survey of breast cancer patients and providers in the Boston area, doctors misdiagnosed patient treatment preferences, believing 71% of breast cancer patients felt it was most important to keep their breast, while the actual figure reported by surveyed patients was only 7%.(63) Qualitative research involving 27 care providers and 43 women from three isolated rural communities in British Columbia highlighted that in choosing place of birth women may prioritize social outcomes, such as giving birth in one’s home community among family and friends, over clinical outcomes, such as having access to caesarean section and epidural analgesia in a “referral” hospital with a higher level of obstetric service.(64) In extreme circumstances, when care providers did not identify and incorporate women’s preferences for local birth into decision-making, women chose to have an unassisted home birth or arrived at the hospital in advanced labour to prevent transfer to a “referral” community with a higher level of obstetric service, causing increased clinical risk of adverse outcomes.(64,65)

There is some evidence that preference misdiagnosis occurs in decision-making for birth after caesarean and that women struggle to make the choice for mode of delivery. Qualitative studies of women's decision-making for birth after caesarean in Australia (66) and the United Kingdom (67) indicate that women experience a tension between their desire to have a vaginal birth, what they felt was best for themselves, and to maximize well-being for their baby, based on the perception that elective caesarean was safest for neonates. Women frequently base their choice on the social needs of their family, such as the need for a short postpartum recovery in order to care for their partner and other children, rather than on clinical risks and benefits to her and her baby.(24) These studies illustrate that women do not make informed choices for mode of delivery after caesarean in isolation, rather they are influenced by a complex web of social and professional relationships. In order to support women's decision-making, it is necessary to understand the context of their choices.

When faced with the challenging decision of mode of delivery after caesarean, women also desire more decision support. Qualitative studies nested in randomized controlled trials evaluating SDM tools for birth after caesarean have reported that many women find informed choice decision-making and/or non-directive counseling to be unsupportive and would prefer more guidance in decision-making.(38,68,69) This indicates the need for assessing women's desired level of participation in decision-making rather than adopting a blanket approach to "informed choice" for birth after caesarean.

It is also important to have an understanding of the context of women's decision-making and how care providers and health service decision makers influence women's choices.

The Obstetrics and Gynecology Risk Research Group, a multidisciplinary team of researchers interested in the ethics of childbirth decision-making, argues that the power dynamics between patient and care provider make it challenging for patients to express their preferences, ask questions when information is unclear, and advocate for their informed choices.(16,17) While such power imbalances are not unique to maternity care, they impact women's agency and may allow care providers to influence women's decisions to match their clinical recommendation, which is frequently to opt for elective repeat caesarean. Klein *et al* found in their survey of Canadian maternity care practitioners that obstetricians, family physicians, and midwives as groups have varying attitudes toward safety in childbirth, with obstetricians favouring elective repeat caesarean section for women with a previous uterine scar.(70) Similarly, a survey of a representative sample of 2,400 US women who gave birth between 2011-12 revealed that when care providers expressed an opinion regarding options for birth after caesarean (72% of the time), it was typically in favour of a caesarean (88%).(71) This evidence suggests that care providers' attitudes may be reflected in the advice they provide to women, which may in turn influence women to plan elective repeat caesareans that may not reflect their preferences. It is thus necessary to explore the role of the context of women's decision-making to understand the constellation of factors that may influence implementation of SDM. Understanding these factors may assist in the development of strategies that could facilitate implementation.

Finally, caesareans in circumstances where planned VBAC is a reasonable option are associated with increased costs to the healthcare system and adverse health outcomes.

Caesarean delivery costs 60% more than vaginal delivery (\$4600 vs. \$2800) and consequently “overdiagnosis” of caesarean creates strain on health care system funding and resources.(72) Notably, repeat caesareans are the single largest contributor to the overall caesarean section rate in Canada. In 2010-11, multiparous women with a singleton, cephalic pregnancy who had a repeat caesarean at term accounted for 32% (n=21,947) of all caesareans for five Canadian provinces (British Columbia, Alberta, Ontario, Nova Scotia, and Newfoundland and Labrador).(11) In that same study, the next largest contributor to the caesarean rate was primary caesarean for nulliparous women with a singleton, cephalic, term pregnancy who were induced or had a caesarean before labour (17%, n=11,956) and the caesarean rate for the total obstetric population was 28.5% (n=68,584).(11) Caesareans also expose mothers to risk of morbidity and mortality, including uterine rupture, hysterectomy, operative injury, and puerperal fever.(13,73) In a large meta-analysis of the published literature on VBAC (1966-2009) the rate of uterine rupture for all women with a prior caesarean (regardless of route of delivery) was 0.3% (95% CI 0.2-0.4) and the risk was significantly increased with planned VBAC (0.47%) versus elective repeat caesarean (0.026%).(54)

With each subsequent caesarean, the risk of complications and adverse outcomes increases. After two caesareans, the risk of placenta accreta is 0.57%,(74) which is similar to the risk of uterine rupture after one caesarean. The overall risk of perinatal death due to uterine rupture is 6.2%,(54) while the risk of maternal mortality due to placenta accreta is 7% (75) and 71% of placenta accreta cases result in hysterectomy.(76) Compared to babies born vaginally, those born by caesarean are more likely to have respiratory complications, be admitted to

neonatal intensive care, and have difficulty breastfeeding.(77) In the long-term, children born by caesarean also have increased odds of obesity and of developing allergic and autoimmune diseases, including asthma and type 1 diabetes.(78,79)

Taken together, this evidence indicates that clinically unnecessary caesareans come with significant costs to the health care system. However, SDM has the potential to curb these effects in addition to enhancing patient-centred care. Interventions to support SDM for birth after caesarean are associated with a significant increase in women's knowledge of the clinical risks and benefits of mode of delivery.(44,80) SDM researchers hypothesize that women who are informed of the risks of repeat caesareans may be more likely to prefer planned VBAC, which would in turn lead to decreased caesarean rates and adverse outcomes.(81) However, to ensure that women receive the mode of birth that matches their informed preferences, it is necessary that they have a supportive context in which to act on that decision. Exploring the context of women's decision-making will lead to locally-derived knowledge on the factors that influence choice and may be used in the development and testing of tailored interventions to support SDM for mode of delivery after caesarean.

In summary, women's decision-making for birth after caesarean takes place in a complex social and health services context. Women struggle to make difficult trade offs between the options of mode of delivery and would benefit from decision support in the form of SDM. The current study offers such knowledge by using an iKT framework to explore attitudes toward and experiences with decision-making for birth after caesarean in the context

of British Columbia. Findings may have significant implications for the development and implementation of strategies to support SDM.

1.5 Structure of the Chapters

In Chapter 2, I provide a review of the literature relevant to the qualitative study of decision-making for mode of birth after caesarean. In Chapter 3, I describe the constructivist grounded theory study design and methods I used to answer my research questions. In Chapters 4 and 5 I provide the results of my qualitative analysis of interviews with women, care providers, and policy makers. In Chapter 6, I synthesize this analysis using the lens of complex adaptive systems theory. In Chapter 7, I describe the integrated knowledge translation (iKT) process that took place over the course of the dissertation research. Finally, in Chapter 8, I offer a discussion of the qualitative research findings and their implications for future research, policy, and practice.

Chapter 2: Literature Review

In this chapter I provide a critical analysis of the literature relevant to decision making for mode of delivery after caesarean. I expand on key concepts presented in the Introduction, appraise and synthesize the relevant literature, and provide the empirical and theoretical rationale for my methodology. I begin by discussing the literature as it pertains to attitudes, experiences, and risk perceptions with birth after caesarean at the micro level of the healthcare system among women and care providers (section 2.1). I then describe the literature on the meso and macro (organizational, policy, cultural) contextual factors that influence access to VBAC and the resources needed to support women's decision-making (section 2.2). Finally, I explore research on interventions to support decision-making for birth after caesarean and describe previous literature exploring implementation of SDM interventions (section 2.3).

2.1 The Interdisciplinary Literature Review Method

Grounded theory research aims to develop a theory that emerges from qualitative data, rather than to test a specific hypothesis. A literature review may contaminate this emergence by imposing ideas and assumptions on qualitative data from the existing literature. Glaser and Strauss's traditional or classical grounded theory research contests conducting the literature review prior to analysis, seeing it as a "constraining" exercise that can compromise the validity of analysis.(82) However, the notion that the researcher can remove all prior knowledge of an area of research is unrealistic. More recent iterations of grounded theory posited by Strauss and Corbin (83) and Charmaz (84) take the epistemological position that there is no such thing

as neutral or objective research and a researcher cannot abandon all prior knowledge when embarking on a study.

Disciplinary conventions also commonly dictate that a literature review be conducted at the outset of the research process. In health services research, one of my overarching disciplines, a literature review aims to identify gaps in the research, clarify unanswered questions, and critique the existing literature. The literature review assists in justifying the rationale for the research project and assists in preparing the research proposal and ethics application for data collection and analysis. These benefits of an early literature review also apply to grounded theory research. However in grounded theory, the literature review also functions as “data to be used by the analytic strategies of the research.”(85) It can serve as a source of comparison and analysis to demonstrate how an author’s theory “extends, transcends, or challenges dominant ideas in your field.”(84) An early literature review in a grounded theory study can help the researcher gain sensitivity to assumptions and preconceptions in their field of study and in their own perspective on the research problem.(86)

My literature review was a recursive process that began at the outset of my doctoral program of research to provide an understanding of the existing published research on decision-making for birth after caesarean. This was not a systematic review of the literature that would precede a hypothesis testing study. Rather I explored the published literature on women’s, care providers’, and organizational attitudes and experiences toward decision-making for birth after caesarean, as well as research on implementation of SDM for birth after caesarean. The search strategy was iterative; I continued to search and analyze the extant

literature as I identified new avenues of inquiry through my interviews. After completing my grounded theory data collection and analysis, I then added to the review to evaluate earlier studies that observed similar/dissimilar findings, and to set the stage for how my grounded theory responded to gaps in the existing literature. I conducted the literature review alone, but presented synopses of the literature review findings to knowledge partners at intervals throughout the research process and at their request. In return, knowledge partners offered suggestions for tailoring the literature review to answer their clinical and policy questions. This led, for instance, to further searching of the literature on the effectiveness of existing SDM interventions in response to feedback from the Ministry of Health.

This flexible, adaptive approach also is encouraged in knowledge translation research to understand the mechanisms and circumstances that underpin implementation of complex interventions such as SDM.(87) Traditional systematic reviews may not answer the question of why interventions work in some circumstances and not in others, while less traditional review methods (such as realist or narrative review) may be better suited to answer such questions by allowing the synthesis of heterogenous, methodologically diverse, and contradictory evidence from both qualitative and quantitative studies.(88) In this dissertation, I drew primarily from the interpretive review method “narrative summary,” which involves the selection, chronicling, and ordering of evidence to produce an account of the literature.(89) In narrative reviews, qualitative and quantitative studies are discussed side by side.

My strategies began with a search of the existing qualitative literature on my core research questions, focusing on literature from Canada and other countries with comparable

health service settings and caesarean section rates. My initial search questions were:

1. What are women's attitudes toward and experiences with mode of delivery after caesarean?
2. What are care providers' attitudes toward and experiences with providing care for women considering mode of delivery after caesarean?
3. What are decision makers' experiences with planning services for birth after caesarean?
4. What are the factors that influence implementation of SDM in maternity care?

As this was not a systematic literature review, I restricted my search to two electronic databases (PubMed and Google Scholar) and did not limit my search by study design or year of publication. My searches included a combination of medical sub-headings and free text terms, and I continually added new search terms as my data collection and analysis progressed. I also explored the grey literature (e.g. difficult to locate materials and non-peer reviewed policy material and reports) by searching Google and websites for organizations that promote SDM (e.g. Childbirth Connection, Ottawa Health Research Institute). I supplemented my searches by scanning the reference lists of included studies, scanning lists of articles that have cited included studies, and discussing the literature with my supervisory committee to ensure that I had a comprehensive and current overview of the literature related to decision-making for birth after caesarean and implementation of SDM. I selected studies based on my judgment of their rigour, relevance to the study, and their contribution to extend or challenge my theoretical argument. I now turn to my critical analysis of the literature relevant to decision-making for mode of delivery after caesarean

2.2 Women's Attitudes and Experiences with Birth after Caesarean

As described in the Introduction, findings on women's attitudes toward and experiences with mode of delivery vary by geography and ethnicity. In addition, women's decision-making attitudes and experiences vary depending on their preferred mode of delivery. Black et al recently completed a meta-ethnographic synthesis of 20 papers reporting the views of 507 women from four countries.(90) The authors identified three clusters of women based on their preference for mode of delivery and the factors that influenced each group's decision-making. Women who confidently sought VBAC were influenced by a long-standing anticipation of vaginal birth. Those who sought repeat caesarean were influenced by their previous birth experiences and encouragement from family, friends, and health professionals who recommended repeat caesarean. Women who did not have a firm preference were open to information, were influenced by professional guidance, and put effort into weighing the attributes of their birth options to assess net benefit.

This variation in women's decision-making differs from the earliest work on patient decision-making for mode of delivery after caesarean conducted by McClain (1983), which observed a more homogenous process.(91) McClain identified three attributes of women's decision-making process: (a) that women's social goals and perception of medical risks were equally weighted and central to their choice; (b) that women confirm their decisions by identifying multiple benefits for the mode of delivery they prefer and multiple hazards for the option they reject; and (c) rather than consider the probabilities of outcomes, women construct

mental images of anticipated events and the potential consequences of their choice based on their past childbirth experiences.(91)

Other researchers have explored when women form a preference for their mode of delivery after caesarean. Two separate qualitative studies on decision-making for birth after caesarean conducted in the UK found that some women may be very certain about their choice before pregnancy, while most make their choice during pregnancy as new information comes available and they feel more ready or pressured to make a decision, however some may feel uncertain about their decision and experience this uncertainty during and even after delivery.(69,92) This suggests that decision-making is an evolving process and care providers should not assume that women's preferences in early pregnancy will reflect their final choice. It also demonstrates that the decision can be challenging for women. Qualitative studies with women who had a previous caesarean in the UK (n = 11) (25) and Australia (n = 18) (26) further found that women feel a moral obligation to make the "right" choice based on the perception that they are the primary decision-maker and are consequently responsible for the outcome of their decision, in particular with regard to concern about the potential for bad outcomes for their baby.(25,26)

Taken together, these findings illustrate that decision-making for birth after caesarean is an individual, complex process in which women consolidate risk information and experiential knowledge from a variety of personal, social, and evidence-based sources.

2.2.1 The Role of Relationships

In the context of this complexity, women include other people in their decision-making process to exchange information, help them deliberate, or even make the decision on their behalf.

Goodall, McVittie, and Magill conducted interviews with 10 women pregnant after caesarean in the UK and found that if women allow another person (e.g. care provider, partner) to make the decision on their behalf, they may feel relief and comfort at no longer experiencing the responsibility associated with being the primary decision-maker.(27)

2.2.2 The Role of Resources

The literature has also identified the various resources, in addition to relationships, that inform women's decision-making for mode of delivery. Two qualitative studies involving postpartum interviews with women who gave birth after caesarean in northern England found that, in the absence of accurate, trustworthy, and complete information from their care provider, women rely heavily on knowledge from their previous birth experience(s), which are frequently characterized by feelings of unhappiness, regret, and blame, as well as fears of being physically incapable of having a vaginal birth.(25,28) Lack of knowledge of clinical risks and benefits may result in women choosing elective repeat caesarean.

In 2014 Scaffidi et al surveyed a convenience sample of 45 American women with a history of previous caesarean birth and found that those women who had high knowledge of their birth after caesarean options were more likely to choose VBAC than repeat caesarean (OR 3.9; 95% CI 1.09-13.81).(29) A survey of Canadian women in their first pregnancy found that

over one-third of women chose “I don’t know” when responding to questions about the clinical risks associated with caesarean section.(93) A qualitative study of BC women’s decision making for primary elective caesarean delivery found participants relied on the knowledge of their peers to form the decision for a caesarean, “as long as such birth narratives were technologically inclined and represented a consolidation of the listener’s core attitudes and beliefs.”(94)

The Internet is now the most common source of information for women in pregnancy,(95) however a recent Canadian study reported that the 10 most common websites for the keywords “VBAC” and “Vaginal birth after caesarean” do not provide complete information on clinical risks and benefits of VBAC, based on Society of Obstetricians and Gynaecologists of Canada VBAC guidelines.(96) A UK review of VBAC information websites that women access through Google found that the majority are American websites that portray information irrelevant or inappropriate for a UK health services context.(97) Finally, a comparison of Internet discussion board posts by women contemplating VBAC versus pregnant women in general found that women contemplating VBAC sought more information on health care providers, labour and delivery, and birth narratives from other women.(98)

Together this evidence indicates there is a gap in the availability of high quality online information for childbearing women regarding mode of delivery after caesarean in Canada. However it is unclear how knowledgeable women are about their options for mode of delivery after caesarean in Canada, if such high knowledge correlates with a preference for VBAC, or if

women in Canada actually receive the mode of delivery that matches their informed preferences.

In order to bridge to the evidence to practice gap for mode of delivery after caesarean, it is important to understand women's attitudes and experiences in different health system contexts, including women's misperceptions and misinformation related to VBAC, what information they use to make their choice, and what they perceive to be the barriers and facilitators to VBAC in their local community. Importantly, the recent large meta-ethnography of 20 qualitative studies exploring women's preferences for birth after caesarean did not report on the influence of health system factors in women's decision-making.(90) While VBAC patterns may be consistent among different developed countries, the experiences of women may vary substantively in different health service environments, with different care provider types, and between rural and urban settings. It is also concerning that one study observed that women may defer decision-making to their care provider as a way to cope with uncertainty and lack of knowledge about their options for mode of delivery.(27)

2.3 Care Provider Attitudes and Experiences

The literature on care providers' attitudes toward and experiences with mode of delivery after caesarean is limited to six studies from international settings.(26,31–33,99,100) Cox conducted semi-structured interviews with obstetricians and midwives (n=24) in Florida and found that fear of liability and the convenience of repeat caesarean delivery were the central reasons why providers avoided VBAC deliveries, particularly in rural and community hospitals.(31) Midwives

were more supportive of VBAC deliveries than their obstetrician counterparts, but felt marginalized from being able to participate in VBAC births due to hospital policies.(31) In contrast, in a UK study involving semi-structured interviews with midwives and physicians (n=25), Kamal et al. found that obstetricians, as well as midwives, strongly supported VBAC deliveries, however they felt that the evidence base underpinning VBAC protocols and guidelines was of poor quality and secondary to professional experience.(32) In this study, Kamal et al. observed wide variation in care providers' decision-making styles, which they described as ranging from "consumerist" (patient decides), to "mutualistic" (shared decision), to "paternalistic" (provider decides).(32) Participants did not report on the role of their hospital environment and available resources in decision-making for birth after caesarean, although the limited number of beds available and sensitivity to the health system costs of caesarean section were mentioned briefly as challenges posed by high rates of caesarean section.

Findings from Kamal et al. also highlight the influence that care providers have on women's decision-making process. Discussions about options for mode of delivery after caesarean were contingent on what providers perceived to be the woman's preferences and her physical and mental capability to cope with labour and delivery.(32) Of the providers who claimed to take a mutualistic or shared decision-making approach, some acknowledged using strategies to nudge patients to make choices that were congruent with the provider's preference for mode of delivery.(32) These findings were echoed in a survey conducted by Sur et al. of 119 obstetricians in active practice in London and Oxford to investigate their personal preferences for mode of delivery and management of labour after a caesarean section.(33)

Clinicians who preferred to attempt VBAC themselves were more likely to advocate labour for undecided women, while those providers who preferred elective repeat caesarean for themselves were more likely to counsel their patients to choose that option, regardless of the clinical indication for the patient's previous caesarean.(33) These observations reinforce findings from qualitative studies with UK women, described above, which found that care providers may make the decision for mode of delivery on the woman's behalf, sometimes at her request.(27)

Recent evidence out of the US suggests that affective traits may also play a role in care providers' ability to support women in choosing mode of delivery. Yee et al. surveyed 94 attending obstetricians at a Northwestern University and collected retrospective data on patient outcomes from 2008-2013 (n=1,502) to identify differences in delivery outcomes associated with provider cognitive characteristics.(101) Using a random effects regression model, the authors found that physicians with high proactive coping (i.e. ability to cope with stress and distress) were significantly more likely to have patients who attempted VBAC (adjusted OR 1.86; 95% CI 1.10-3.14) and those with low anxiety were significantly more likely to have patients experience VBAC (adjusted OR 2.08; 95% CI 1.28-3.37).(101) These findings confirm common wisdom that managing a planned VBAC labour and delivery requires self-efficacy, and the ability to cope with stress and anxiety, uncertainty, and risk. These attributes may be associated with decision-making that takes place during labour, as well as prenatally. In Canada, one survey on the attitudes of different care provider groups in Canada was conducted by Klein *et al*, who found that obstetricians, family physicians, and midwives as groups have

varying attitudes toward safety in childbirth, with obstetricians favouring elective repeat caesarean section for women with a previous uterine scar.(70) These findings indicate the need for further study into how different care provider groups perceive VBAC to be risky or safe, as these attitudes may influence how they approach decision-making for birth after caesarean.

The existing literature on care provider attitudes and experiences with birth after caesarean has taken place in the UK and US, where the health system context for birth after caesarean is different from that in Canada.(26,31–33,99,100) More attention has been paid to women’s attitudes and experiences. The existing qualitative literature in that area suggests care providers may have a strong influence on women’s preferences and women may not be the primary decision makers for mode of delivery in some cases. In order to understand women’s decision-making processes better, it is imperative to engage in further study with the care providers who influence those decisions. Another limitation of the existing studies with care providers is that they primarily took place in larger academic medical centres and findings may not be generalizable to smaller settings with limited obstetric resources. The attitudes of care providers in such smaller community hospitals with limited resources require additional study. Findings from Cox et al. from the Florida context suggested there were different VBAC practice patterns between rural and urban settings, with rural and community settings expressing fear of liability around planned VBAC due to limited anaesthesia resources.(31) The Canadian health services context is similar to that in the US and UK, however some key differences may have an influence on care provider practice patterns. Namely, one third of maternity care for birth after caesarean is provided by family physicians in Canada, while in the UK care is provided mainly by

obstetricians and midwives, and in the US largely by obstetricians. Midwifery care differs between the three countries with registered midwives in Canada providing community-based antenatal care and labour and delivery in home, birth centre, and hospital settings. There is a need for further study into how attitudes and experiences of care providers vary by profession in a Canadian context, as findings from such research will likely provide insight into how care providers counsel women for birth after caesarean.

2.4 Perceptions of Risk in Childbirth

Decision-making for mode of birth after caesarean involves consideration of the risks and benefits of the attributes of the delivery options – planned VBAC or planned elective repeat caesarean – and their potential outcomes. However, how patients and care providers conceptualize “risks and benefits” may vary depending on their attitudes and beliefs. As the above literature on women’s experiences suggests, the features of mode of delivery that matter most to women’s decision-making process may depend on a range of personal, social, and clinical concerns – her childbirth experience, peer attitudes, relationship with her care provider, her ethnicity, and geographic location. Kornelsen and Mackie argue that, “for decades, scholars of risk have applied their resources to understand the break between social and scientific rationality and the relationship – or dissonance – between experts and laypersons’ conceptualizations of risk. The clash of medical and social risk in childbirth falls directly in this domain.”(102)

The concept of “comprehensive” risk developed by rural maternity health services researchers Barclay and colleagues offers a clear framework for considering the range of risk perceptions that may emerge in childbirth decisions. Developed based on findings from a series of qualitative studies involving maternity clinicians and consumers in rural Australia and Canada,(2) the concept of “comprehensive risk” involves two core categories: health services risks and social risks. “Health services risks,” as described by clinicians, involves clinical risks (adverse outcomes for mother and baby), as well as legal, political, operational, and financial risks. The second category, “social risks,” as described by consumers, involves cultural risks to traditional values and spirituality, emotional risks of system-initiated distress, and financial risks of compromised family budgets, for instance due to the cost of traveling to access birthing services. A comprehensive perspective toward the risks and benefits of mode of delivery options would consider clinical outcomes, and potentially also risks related to clinicians’ and health authorities’ fear of liability in the event of adverse VBAC outcomes, financial (dis)incentives for clinicians paid in a fee for service model, and social-emotional risks to women if the health system can not provide the mode of delivery that matches their informed preferences. As discussed in a later section, SDM is one approach for treating birth after caesarean as a holistic decision that considers the comprehensive risks and benefits of options.

Hall, Tomkinson, and Klein observed the clash between health services and social risks in their Canadian grounded theory study of 9 pregnant women approaching their first birth and 56 care providers (midwives, family physicians, nurses, obstetricians, doulas).(103) The core theme emerging from analysis was “minimizing risks while maximizing integrity,” in which risk was

variously defined as medical and psychological, depending on the context of relationships, evidence, and local healthcare culture. For the care providers, psychological risks included criticism from others and fear of litigation. These risks were mitigated by open communication, longstanding relationships, and shared control with patients, as well as through models of practice that supported dialogue among colleagues. However, the authors observed that personal values and biases may shape how care providers perceive risks and engage in decision-making. For instance some care providers described open communication as *"telling women what to do while pretending women had control: 'it's a lie we're giving clients control. They can pretend they have control, but we're just doing that to be nice as practitioners, and really we are supposed to keep control.'"*(103) The study did not explore the experiences of and care for multiparous women, however such insights into how care providers perceive risks to themselves may have implications for decision-making for birth after caesarean. Fear of professional criticism or litigation may influence what risks care providers choose to discuss, how they frame the clinical risks of mode of delivery, and their willingness to make a shared decision with patients.(104,105)

Additional Canadian studies from Maureen Heaman illuminate the multidimensional, comprehensive nature of risk assessment. Heaman, Gupton, and Gregory conducted a descriptive qualitative study with 205 women, half whom had pregnancy complications (n = 103) and half of whom had none (n = 102).(106) Women with complications voiced greater risk perceptions and identified specific risks while women with no complications described potential risks that were diffuse and hypothetical. Participants' histories played a role in the process of

their self-assessment of risk, as one woman with complications described: *"I have had back problems and have had a spinal fusion. There was concern about being able to have a baby [carrying to term] and a 'normal' pregnancy."*(106) Women who had no complications felt their risks would decrease if they had qualified care providers, followed advice, and engaged in healthy practices: *"I have prepared myself by reading, diet, and appropriate doctor. I feel I have done everything possible to ensure my safety and health."*(106) The study, strengthened by its Canadian setting and large sample size, focused on aspects of comprehensive risk and explored how social risks might impact clinical risks, such as how a woman's previous experience with system-initiated distress may influence her perceived and actual clinical risk in future pregnancies. However, the study did not explore how women's perceptions influenced their decision-making practices and no results were specific to birth after caesarean. Exploration of women's self-assessment of risk in the context of birth after caesarean may provide insight into how women make decisions regarding mode of delivery.

In the same program of research, Bayrampour, Heaman, Duncan, and Tough investigated the predictors of pregnancy risk perceptions in a convenience sample of nulliparous women in their third trimester in Winnipeg (n = 159).(107) Using the Perception of Pregnancy Risk Questionnaire (PPRQ) they observed that high pregnancy-related anxiety, high risk status, advanced maternal age, and early gestational age were associated with increased perception of risk in pregnancy. Anxiety was the strongest predictor accounting for 30% of risk perception and its effect was most prominent in older women. These findings indicate that risk assessments are individualized and are based on social-emotional factors, as well as clinical

information. It is unclear whether these findings would apply to multiparous women, who have a labour and delivery experience that will shape their perspectives. However it is plausible that women who have had a previous emergent caesarean section would have higher perceptions of risk. Again, these findings indicate the importance of exploring how multiparous women construct notions of risk and safety in childbirth after a previous caesarean.

In spite of the comprehensive nature of “risk” highlighted by these studies with pregnant women, clinicians tend to focus on clinical risk in decision-making discussions with patients regarding birth after caesarean. Looking again to Goodall et al.’s interviews with UK mothers, participants revealed that the information physicians provide focuses on the clinical or *procedural* risks of mode of delivery, such as you have “a 30% chance of having a CS” during an attempted VBAC.(27) Such discussions omit other health services and social risks that may also be salient to women and providers, such as the impact of surgical recovery on a woman’s ability to care for her older child.

Additional research on risk communication suggests that statements such as “you have a 30% chance” may be difficult for patients to comprehend. For instance, Schapira and colleagues conducted focus groups to evaluate women’s different responses to breast cancer risk information, and found that frequencies (e.g. 30 out of 100) were more easily comprehended than percentages (e.g. 30%).(108) Jasper et al. examined the effects of “framing” on women’s perception of fetal risk and their intention to use a safe drug in pregnancy.(109) They recruited 105 women who were pregnant or planning a pregnancy through the Motherrisk program in Toronto. Women who received negatively framed

information (1-3% chance of having a malformed child) had a significantly higher perception of clinical risk than those who received positively framed information (97-99% chance of having a normal child) and were less likely to want to take the drug (14.9% vs. 8.3%, $p = 0.0484$).

These results indicate that the risk attributes selected for discussion and the way risk information is framed may influence pregnant women to avoid healthcare choices they perceive to be dangerous and care providers should be thoughtful in how they present risk (and benefit) information. It is unclear how care providers actually engage in discussions about the risks and benefits of mode of delivery after caesarean and, as discussed above, the evidence is limited to studies from the US (31) and the UK,(27,32,33) where the model of care is substantively different from that in Canada. However these studies suggest care providers' selection and presentation of the risks and benefits of the attributes of delivery options and their potential outcomes influence women's attitudes.

Exploring women's and care providers attitudes, experiences, and comprehensive risk perceptions with regard to birth after caesarean would provide much needed understanding of the social and personal factors that inform their decision-making for mode of delivery. The existing literature on women's and care providers' attitudes and experiences also suggests that decision-making for birth after caesarean may be influenced by factors related to environment and policy, such as being in a low-resourced rural community or in a highly litigious setting. The following section investigates the literature on these factors and how they may influence access to VBAC services, beginning with a discussion of existing policy for access to VBAC services in Canada.

2.5 Access to Vaginal Birth after Caesarean (VBAC)

In Canada, the Society of Obstetricians and Gynaecologists of Canada (SOGC) guidelines support women's access to planned VBAC. Last updated in 2005, the guidelines recommend that care providers should support women as consumers making informed choices: "provided there are no contraindications, a woman with 1 previous transverse low-segment Caesarean section should be offered a trial of labour (TOL) with appropriate discussion of maternal and perinatal risks and benefits."⁽¹³⁾ This approach of non-directive counseling is echoed in the Canadian Joint Policy Statement on Normal Childbirth (110) and the College of Midwives of British Columbia guidelines for birth after caesarean.⁽¹¹¹⁾ These guidelines are also consistent with the current American College of Obstetricians and Gynecologists (ACOG) committee opinion on VBAC.⁽¹¹¹⁾ However the language included in guidelines from the Association of Ontario Midwives takes a more persuasive tone and states that women not be offered VBAC, but rather that care providers *recommend* planned VBAC for eligible women.⁽¹¹²⁾ The contraindications for VBAC in Canada are minimal and exclude only a small portion of women with a previous caesarean. Exclusions are based on fair evidence from well-designed observational studies (II-B) and stated contraindications in the SOGC guidelines include a previous classical or inverted "T" uterine scar, previous hysterectomy or myomectomy entering the uterine cavity, or contraindications to labour such as placenta previa or malpresentation.⁽¹³⁾ Oxytocin induction and augmentation of labour, and mechanical induction via foley catheter, may be safely used in a planned VBAC.⁽¹³⁾ Multiple gestation, diabetes mellitus, suspected fetal macrosomia, and

postdates are not contraindications for planned VBAC.(13) Similarly, more than 1 previous caesarean and a due date less than 18-24 months since the previous caesarean are not contraindications, however women should be counseled regarding the increased risk of uterine rupture for each.(13) In spite of these supportive guidelines, there is emerging evidence that women face significant health service and policy barriers to access of VBAC services and that access has become increasingly limited over time as a result of these barriers.

Over the past thirty years the rate of planned VBAC has fluctuated in Canada, reflecting trends in other developing countries. In the early 1990s VBAC was a proposed method for curbing the rising caesarean section rate, and the national VBAC rate peaked in 1996 at 35%.(113) Guise et al. identified the key factors that caused this trend in developing countries in an extensive systematic review prepared by the Agency for Healthcare Research and Quality (AHRQ) for the 2010 NIH Consensus Development Conference on emerging issues related to VBAC.(54) The downturn in VBAC rates can be traced to 1996, when McMahon et al. published a landmark study of 6,138 Nova Scotia women with a previous caesarean, which suggested that the rate of uterine rupture and consequent morbidity associated with VBAC was 0.3% among women who underwent planned VBAC (n=3,249), higher than previously thought.(114) The study was limited by its design and setting; results were not adjusted for women with a previous vaginal delivery and data were from a single province. However, the perceived increased risk of uterine rupture associated with planned VBAC resulted in the American College of Obstetrician and Gynecologists changing their guidelines in 1999 to state that VBAC should be attempted only in settings with that are “equipped to respond to emergencies with

physicians *immediately available* to provide emergency care” (emphasis added), while their previous guidelines had used the phrase *readily available*.⁽¹¹⁵⁾ Notably, the “immediately available” standard does not apply to other rare obstetric events that are equally (or more) precipitous and catastrophic as uterine rupture, such as prolapsed cord or shoulder dystocia, which may occur in any pregnancy, not just to women with a previous caesarean. The impact of this evolving evidence on women’s access to VBAC services was swift and dramatic. In a study of all hospitals (n=312) in four regions of the United States, Roberts et al. found that 30.6% of hospitals that provided VBAC services prior to 1999 stopped offering planned VBAC after the ACOG guidelines were updated. In Canada, the VBAC rate took a downward turn to 17.5% in 2011/2012.⁽¹¹⁶⁾ However, unlike in the United States, no studies in Canada have explored the association between changing policy and rate of planned VBAC and the health system and policy factors that influence women’s access of these services are unclear.

Unlike in the United States, Canadian guidelines have used less restrictive language regarding when and how woman may access planned VBAC. The SOGC guidelines define timely access from “decision-to-incision” as approximately 30 minutes. This means that settings offering planned VBAC also should be prepared to offer operating room resources, nurses, and pediatric and anaesthesia services to mitigate the risks of potential uterine rupture, resources that are not readily available in all hospital settings.⁽¹³⁾ The SOGC guidelines do not provide standards for whether staff should be on site in order to provide this care. However, they encourage the development of local protocols and “women who live in areas where local hospitals cannot provide a timely Caesarean section should be offered the opportunity for

transfer to a facility where this service is available, in order to permit a TOL [trial of labour] after Caesarean.”(13) The more recent VBAC guidelines published by ACOG in 2010 echo this recommendation but do not provide a guide for the length of time from decision to incision; rather, they continue to state “that resources for emergency cesarean delivery should be ‘immediately available.’”(111) The nature of these resources and the length of time denoted by “immediately” are open to interpretation. Unlike in the United States, Canadian guidelines have used less restrictive language regarding when and how woman may access planned VBAC. The SOGC guidelines define timely access from “decision-to-incision” as approximately 30 minutes. This means that settings offering planned VBAC also should be prepared to offer operating room resources, nurses, and pediatric and anaesthesia services to mitigate the risks of potential uterine rupture, resources that are not readily available around the clock in most hospital settings.(13) The SOGC guidelines do not provide standards for whether staff should be on-site in order to provide this care. However, they encourage the development of local protocols and “women who live in areas where local hospitals cannot provide a timely Caesarean section should be offered the opportunity for transfer to a facility where this service is available, in order to permit a TOL [trial of labour] after Caesarean.”(13) The more recent VBAC guidelines published by ACOG in 2010 echo this recommendation but do not provide a guide for the length of time from decision to incision; rather, they continue to state “that resources for emergency cesarean delivery should be ‘immediately available.’”(111) The nature of these resources and the length of time denoted by “immediately” are open to interpretation.

The strength of evidence is weak regarding the optimal response time from indication of uterine rupture to caesarean section and in the SOGC guidelines the evidence is categorized as III-C: poor evidence based on expert opinion. The best available literature consists of two case series conducted in tertiary hospitals with in-house anaesthesia and obstetrics. There is no evidence from settings with off-site surgical teams. Leung et al. investigated all cases of symptomatic uterine rupture (n=99) among 156,456 total births at the Los Angeles County University of Southern California's Women's Hospital between 1983-1992.(117) Where prolonged deceleration was the only indication of uterine rupture (n=32), no patient had significant clinical morbidity when delivery occurred within 17 minutes of indication. When prolonged deceleration was preceded by severe late deceleration (range of 36-90 minutes; n=18), perinatal asphyxia occurred as early as 10 minutes before the onset of prolonged deceleration and delivery. Bujold et al. reviewed 23 cases of uterine rupture in a Canadian tertiary setting between 1998-2000 and found differences of 4 minutes from decision to intervene to caesarean between infants with severe metabolic acidosis vs. not and extrusion of the fetus or placenta vs. not (17 vs. 13 minutes for each outcome).(118) These differences, while not statistically significant in this small study, suggest that neonatal outcomes may improve with faster access to the operating room.

While the SOGC practice guidelines support women's access of VBAC services and recommend offering VBAC to the majority of women with a previous caesarean, the surgical staff and resources required for emergency caesareans may not be available in some settings. These environmental and policy requirements may limit the delivery options available to

women and may influence how they are counseled about the safety of planned VBAC, particularly in low resource environments or in settings with longer intervals from decision-to-incision. There is no evidence in Canada on the effect of SOGC guidelines, and the specific recommendations regarding timely caesarean, on women's access of planned VBAC. The next section explores the evidence on the impact of health service and policy factors on access to planned VBAC in international settings.

2.5.1 Health Services Barriers to Access of Planned VBAC

In the United States, emerging evidence indicates that health service decisions on whether or not to provide continuous in-house caesarean section back-up limit the mode of delivery options available to women. Barger et al. conducted a survey in 2012 of all California maternity hospitals (n=243) and found that 139 hospitals in the state offered VBAC services (53%).(37) This represented a sharp decrease in comparison to ten years previous when 74% of California maternity hospitals offered planned VBAC.(119) In the Barger survey, among the hospitals that offered planned VBAC, 49.6% were large teaching hospitals (>2500 births per year), and 70.5% were non-profit.(37) VBAC was offered in only 5 of 37 (96.4%) hospitals designated as rural (population density of less than 250 persons per square mile).(37) Availability of 24/7 anaesthesia coverage was a predictor of VBAC services. Among hospitals that did not offer planned VBAC, only 30 hospitals (29%) had 24/7 anaesthesia coverage, compared with 110 hospitals (79.1%) that offered VBAC services.(37) Among VBAC hospitals where the obstetrician

or anaesthetist was on-call all or part of the time, more than 90% required that they be available within 15 minutes.(37)

Barger et al. also surveyed nurses on the reasons why hospitals (n=99) had stopped providing planned VBAC and the most commonly cited reasons were lack of immediate available anaesthesia (70.7%), lack of immediately available obstetrician (54.5%), ACOG guidelines (48.5%), and/or hospital protocols (44.4%).(37) It is noteworthy that while 53% of the hospitals in the study *offered* planned VBAC, the median rate of actual VBAC among eligible women in those hospitals was only 10.8% (range 0 to 37.3%).(37) The most commonly cited reason for low VBAC rates was practitioner unwillingness to support them, primarily due to a requirement to be continually present during labour. This result is consistent with Cox's findings from qualitative interviews with maternity care providers in Florida.(31) While a hospital may permit VBAC and have supportive policies, it may not routinely provide VBAC services due to individual care provider reluctance. However, the study did not collect data from obstetricians to determine the reasons for their lack of support of planned VBAC. Birnbach et al. suggest strategies for reducing the health services risks associated with offering VBAC in the absence of 24/7 anaesthesia, including providing an antenatal anaesthesia consult for VBAC patients, developing process maps to improve communication on labour and delivery suites, practicing 'fire-drills,' and developing care protocols based on patients' clinical risk status.(120) However, the effect of such interventions is understudied and it is unclear which strategies would apply to a Canadian context and whether such measures would enable Canadian practitioners to offer VBAC within the context of limited access to anaesthesia services.

In Australia, similar variation in care provider practice patterns for planned VBAC was observed in the *Birth Choices* study, a prospective multi-centre randomized controlled trial involving 227 women that tested the impact of a patient decision aid on women's choice of mode of delivery after caesarean.(38) Exposure to the decision aid was associated with an 2.17 point increase in knowledge scores out of 15 (95% CI 1.71-2.63, $p < 0.001$), but no significant difference in preference for VBAC or elective repeat caesarean between intervention and control groups.(38) Rather the authors observed that the hospital site at which women gave birth predicted women's preferences for mode of delivery. Specifically, pre-study baseline rates for the two study sites for actual VBAC delivery (20% and 80% respectively) were fairly consistent with actual VBAC rates among participants at each site (39% and 70%).(38) The authors hypothesized that low VBAC rates in one of the two study sites may have been the result of "organizational culture and clinical practice patterns"(38) characterized by health care provider resistance to VBAC and unsupportive hospital policies.(39) Shorten et al.'s work suggests that patient VBAC preferences are honoured only in settings that have supportive infrastructure, resources, and policies. However, as with Barger et al.'s survey in California,(37) Shorten et al. did not investigate the reasons for differing clinical practice patterns. This is a significant gap in the literature, for in order to develop interventions that have a meaningful impact on practitioners' practice patterns it is imperative to understand existing patterns, why they occur, and the barriers and enablers to making practice patterns more evidence-based and patient-centred. Clinicians and health service decision makers' attitudes and experiences may

provide insight into why health services do not provide the resources, and/or budget, necessary to support evidence-based care for birth after caesarean.

While no studies have specifically examined access to VBAC services in a Canadian context, evidence from observational (65,121,122) and qualitative studies (123,124) indicates that there is variation in access to caesarean section services for women in British Columbia due to environmental and health system factors. Qualitative studies on sustainability of rural maternity services in BC conducted in the early 2000's found that individual hospitals often develop criteria for eligibility for local delivery based on limited availability of surgical services, and that these guidelines typically exclude women with a previous caesarean.(123,124) Practitioners in these settings will recommend that women travel to a facility with surgical back-up to support a trial of labour, per clinical practice guidelines.(13)

While there is evidence from California (37) that lack of immediately available anaesthesia influences care provider willingness to support VBAC, there is no evidence to date of this relationship in BC. However the limited availability of obstetric anaesthesia in BC is a contentious patient safety issue that has received media coverage.(125) The four tertiary hospitals in the province (BC Women's Hospital, Royal Columbian, Surrey Memorial, and Victoria General) are required by Perinatal Services BC standards to have a dedicated obstetric anaesthetist available in-house 24/7. While an anaesthetist may be in house, he or she may not be immediately available in an emergent situation due to an overwhelming caseload. In 2011 an intrapartum stillbirth occurred at Victoria General Hospital (VGH). In a *Globe and Mail* interview a VGH anaesthetist asserted that limited number of obstetric anaesthetists at the

hospital “could have caused a delay in care, which could have resulted in the death of a baby.”(126) In a service review of the incident conducted by a multidisciplinary panel of Alberta physicians and patient safety experts, the authors recommended increasing the number of dedicated obstetric anaesthetists from two to three in order to increase patient safety and quality of care.(127) In the context of this controversy, it is possible that anaesthesia availability may be a factor in decision-making for planned VBAC. The influence of anaesthesia access on care providers’ willingness to support VBAC should be studied in a Canadian context.

There is emerging evidence that variation in hospital levels of services and models of care also may be associated with variation in caesarean section rates. The Canadian Hospital Reporting Project indicated in 2014 that, in British Columbia, the repeat caesarean rate ranged from 56-93% among hospitals.(128) The report did not indicate causes for the variation, which may have been due to differences in levels of care or patient demographics. However there is evidence that primary caesarean deliveries vary for non-clinical reasons. Hanley et al. investigated regional variation in caesarean delivery rates in the province between 2004-2007, excluding women with a previous caesarean delivery.(121) After controlling for maternal characteristics and conditions associated with increased likelihood of caesarean delivery, adjusted primary caesarean rates varied twofold and ranged from 14.7 to 27.6 per 100 deliveries in health service delivery areas.(121) The authors hypothesized that this substantial variation likely reflects “differences in practitioners’ approaches to medical decision-making, some of which may be explained by differences in the resources available to the practitioners.”(121) A series of studies by the Centre for Rural Health Research further

illuminate the impact of model of care on caesarean section rates. In a retrospective cohort study of maternal newborn outcomes in rural maternity services in BC, Alberta, and Nova Scotia from 2003-2008 (n=150,797), Grzybowski et al. found evidence that caesarean section rates significantly increase when surgical services are supported by a general surgeon in comparison to models led by General Practitioners with enhanced surgical skills (GPESS) or mixed models that include obstetricians.(122) In contrast, BC women who have a registered midwife involved in their care have lower caesarean section rates.(129,130) Together, this evidence suggests that geographic location, level of obstetrical surgical service, and model of care influence decision-making for mode of delivery. Notably the cohort studies conducted by Hanley et al. and Grzybowski et al. excluded multiparous women with a previous caesarean from analysis and focused solely on women with no history of caesarean.(121,122) There are no studies that explicitly explore the impact of geography, level of service, or model of care on access to VBAC services in BC.

There is evidence from the United States that access to VBAC services has been restricted due to malpractice concerns. Yang et al. investigated liability insurance premiums and tort reforms in the United States from 1991-2003 and found that malpractice pressure was negatively associated with VBAC (beta = -0.35, P = 0.01).(131) Although the healthcare climate in Canada is far less litigious than in the United States, no Canadian studies have investigated the effect of malpractice concerns on access to VBAC services.

2.5.2 The Influence of Financial Incentives

There is clear economic evidence that financial incentives influence clinical decision-making for mode of delivery, with the strongest evidence emerging from California. Stafford examined 461,066 deliveries in California in 1986, finding that source of insurance coverage influences caesarean section rates.(132) Planned VBAC occurred more frequently among women covered by Kaiser health maintenance organizations (19.9%) and Indigent Services (24.8%) in comparison to women covered by private insurance (9.9%).(132)

Johnson and Rehavi compared administrative perinatal data of California and Texas mothers who were physicians to data from ordinary patients without medical training.(19) They also compared outcomes between hospitals where obstetricians receive fees-for-service and those where they were salaried. The authors hypothesized that obstetricians would recommend caesareans for patients if there was a financial incentive to do so (e.g. high reimbursement fee for caesarean) and that physician-patients would better understand their options and be less likely to be persuaded to have a clinically unnecessary caesarean. The analysis confirmed that there is a “physician-induced demand” for unscheduled (e.g. not medically-indicated) caesareans. Controlling for demographic variables, physician-mothers were 11% less likely to give birth by unscheduled intrapartum caesarean in comparison to their non-physician counterparts. Hospitals with higher incentives for caesarean had higher caesarean section rates, but physician-patients were not affected by financial environment. The authors suggested that “financial incentives are an important determinant of treatment; and that patient information is an effective counterweight.”(19) These findings suggest that

informed patients make different (less invasive) childbirth treatment choices, and that improving patient knowledge could decrease caesarean rates.

In 2015, the Pacific Business Group on Health and California Maternal Quality Care Collaborative (CMQCC) conducted a pilot project in three southern California hospitals to reduce caesarean section rates through access to performance data, quality improvement, and payment reform.⁽¹³³⁾ The “value based” payment reform mandated that physicians and hospitals were reimbursed one flat rate regardless of mode of delivery (caesarean or vaginal birth), to remove any financial incentives for performing caesarean. Within one year, the three pilot hospitals experienced an average 20% reduction in caesarean section rates (e.g. 32.6% to 24.2% at Hospital 1). The pilot project team observed that the changes were not due to physician incentives alone. They cite reports from hospital physicians that non-fiscal incentives, like schedule constraints, have a greater influence on their clinical decision-making than do payments. In Canada, there is minimal difference between physician fees for vaginal vs. caesarean birth.

Additional leisure- and psychological-based incentives may influence Canadian physicians’ clinical decision-making. A 2001 analysis of birth certificate and financial data from California hospitals found that caesarean sections for physician convenience are more likely to be conducted in the evening hours so that staff can leave work for leisure time.⁽¹³⁴⁾ Care providers may also perform medically unnecessary repeat caesareans to reduce their anxiety and psychological distress about the legal consequences of an adverse planned VBAC outcome. A 2012 survey of the American College of Obstetrician and Gynecologists’ membership

(n=9,002) found that 58% of respondents said they changed how they practiced due to the risk or fear of being sued and 19% of all respondents had recently ceased to offer planned VBAC for that reason.(135)

The scant literature on the health service and policy factors that influence decision-making for birth after caesarean is cause for concern. The focus of qualitative studies to date has been primarily on women's attitudes and experiences with decision-making for VBAC in international settings. These perspectives are necessary to understand how existing services are meeting women's needs and to identify gaps in patient-centred care. Likewise, the emerging qualitative literature on care providers' attitudes and experiences provides evidence on how environment and professional identity influence how providers perceive birth after caesarean to be risky or safe. This knowledge provides insight into the complexity of decision-making relationships between patients and providers, and illuminates some of the ways care providers may influence women's choice of mode of delivery. However, the evidence on environmental and policy barriers to access of VBAC services indicates that there is a blind spot in the current qualitative literature – the decision-making *context*.

Decision-making for birth after caesarean appears to occur between the patient and care provider in the context of their environment, which includes patients' social relationships, providers' professional relationships, and, importantly, health service resources, policies, and incentives for birth after caesarean. If interventions to support women's informed choice for birth after caesarean are to be successful, they clearly need to attend to barriers at all three interrelated levels of the decision-making process – patient, provider, and context. The next

section introduces the current literature on interventions to support decision-making for VBAC, the strengths of the evidence, and significant gaps in intervention approaches.

2.6 Interventions to Support Decision-Making for Birth after Caesarean

The literature on interventions for promoting evidence-based practice for VBAC may be divided into those that are practitioner-centred and those that are patient-centred. A recent systematic review by Lundgren et al. evaluated the effectiveness of clinician interventions aimed at increasing VBAC rates.(136) Three randomized controlled trial studies were identified and all were conducted during the late 1980s-1990s, prior to the health service and policy changes to VBAC practice that occurred in the mid-90s. In the first trial Thubisi et al. evaluated the effectiveness of antenatal x-ray pelvimetry at 36 weeks in 306 women with a previous caesarean, and observed that *not using* pelvimetry significantly decreased caesarean rates (RR 0.66, 95% CI 0.44-0.98).(137) In the second trial, Bickell et al. evaluated the effects of external peer review on caesarean rates in 45 hospitals, and found no significant effect on VBAC rates (MD -1.9, 95% CI -5.39-1.59).(138) The final study conducted by Lomas et al. evaluated opinion leader education and audit and feedback in 16 Canadian community hospitals that were not teaching institutions over a 24 month period beginning in 1988, and found that the opinion leader education intervention significantly increased VBAC rates (25%) in comparison to controls (14%) (RR 1.74, 95% CI 1.45-2.09).(139) These studies indicate that organization-wide behavior change interventions may be successful in implementing best practices for birth after caesarean.

Specifically, in the opinion leader intervention conducted by Lomas et al. staff from four hospitals were given a questionnaire and asked to nominate the local colleague who best matched the descriptions of an educationally influential opinion leader.(139) The four physicians identified attended a 1 ½ day workshop on evidence from VBAC practice guidelines and principles of behavior change. They then engaged in the following steps: (a) personally mailing to all practitioners engaged in their hospital’s obstetrical care a “detailing” sheet that summarized the 1986 SOGC VBAC practice guideline in a visually striking fashion, following pharmaceutical company drug advertising principles; (b) personally mailing two detailing sheets that included tailored information on issues related to implementing the practice guidelines, which they felt may be of concern to hospital practitioners; (c) hosting a meeting in their community with an expert on VBAC evidence; and (d) maintaining and enhancing regular communication with colleagues and recording these contacts in logbooks.(139) The intervention was successful in changing practitioner behavior and VBAC was offered to 74.2% of eligible women, compared to half of women in the control (51.3%) and audit and feedback (56.3%) groups ($p = 0.002$). However in the opinion leader group, only 38.2% of eligible women attempted VBAC. Although this was significantly higher than the attempted VBAC rate among women in the control (28.3%) and audit and feedback (21.4%) groups ($p = 0.007$), practitioners in all groups reported that many women who were offered VBAC refused it. The authors argued, “further advances in the appropriate use of this surgical practice may have to rely on patient education.”(139) This study demonstrates that clinician-centred interventions alone may effectively change clinician behavior, but interventions that address women’s decision-

making process may also be necessary. Intervening with clinicians alone may not be sufficient to support women in making informed choices for mode of birth after caesarean.

It is unclear from Lomas et al. whether patient preferences actually contributed to lower than anticipated rates of planned VBAC. Patients were not surveyed as part of the study and no information was provided on patient knowledge, VBAC intentions, or exposure to education. Nor did the study provide information on the content discussed by the patient and provider when providers “offered” a planned VBAC. The patient’s perspective on the decision-making process is necessary to understand whether clinician-centred interventions increase patient knowledge of their options, clarity about preferences, and motivation to attempt VBAC.

2.6.1 Patient-Centred Interventions for Birth after Caesarean

Maternity care researchers Gee and Corry noted recently in a 2012 *Obstetrics and Gynecology* editorial that “Given the dearth of information women have about their medical choices, more investment is needed in patient education and tools for shared decision making in clinical settings.”(30) Patient-centred interventions to support decision-making include education resources (e.g. pamphlets, websites, or videos) and interactive decision coaching approaches (e.g. peer counselors, childbirth education sessions, doulas, or decision coaches). In recent years, however, there has been a great deal of attention paid to the development of patient decision aids (PtDAs) for use in pregnancy. These are evidence-based tools that aim to supplement (not replace) the shared decision-making process between patient and care provider. They provide patients with individualized information on the clinical risks and benefits

of their health care options, highlight uncertainties about the evidence, and help individuals to clarify their values and preferences.(43,44) PtDAs can be used *independently* by the patient, *shared* face-to-face with a care provider during a clinical encounter, or *mediated* via telephone or other media, such as with a decision coach.(80,140) The study of PtDAs has been dominated by effectiveness studies focused on the quality of the decision-making *process*, for which outcomes include increased knowledge, congruence between patient values and their healthcare choice, and decreased decisional conflict (e.g. uncertainty about decision making). There has been limited exploration of how to sustainably implement into routine care those decision aids that are proven to be effective in controlled experimental settings.

Six separate systematic reviews were published between 2011 and 2014 that investigated tools to promote SDM in childbirth.(44,53,80,141–143) These reviews used diverse methods of analysis but all included studies that explored the effect of PtDAs on women’s childbirth decision-making quality and effect on clinical outcomes, such as intended or actual mode of delivery after caesarean. Of the reviews, the first three investigated the use of PtDAs in pregnancy and childbirth for a range of decisions, including mode of birth after caesarean, prenatal screening, pregnancy termination, breech delivery, and labour analgesia.(53,141,143) A fourth review was conducted by Horey et al. for the Cochrane Collaboration and focused specifically on the effectiveness of PtDAs for mode of birth after a caesarean.(80) The fifth review was also a Cochrane systematic review conducted by Stacey et al., which explored PtDAs for people facing health treatment or screening decisions, including for childbirth decisions.(44) Finally, Khunpradit et al. completed a Cochrane systematic review on non-clinical interventions

to reduce clinically unnecessary caesarean sections.(142) The six reviews explored a variety of different outcome measures but all observed that in comparison to usual care or information alone, PtDAs for pregnancy significantly increased knowledge,(44,53,80,141–143) and decreased decisional conflict.(44,53,80,141,143)

While these positive decision quality outcomes are important and suggest that use of a PtDA may improve women's decision-making process in pregnancy, there are a number of outcomes with non-significant findings that raise questions about the utility of PtDAs in supporting evidence-based decision-making for VBAC in their current form. All reviews found that PtDAs have no effect on patients' final preferences.(44,53,80,141–143) Looking specifically at Horey et al.'s meta-analysis of three randomized controlled trials involving decision support for mode of birth after a caesarean (n = 2270 women; high-income countries), the authors found no difference in mode of delivery between groups, whether women planned VBAC (RR 1.03, 95% CI 0.97-1.10) or repeat CS (RR 0.96, 95% CI 0.62-1.20).(80) Use of a PtDA for birth after caesarean also did not change the proportion of women who were unsure about their preference (RR 0.87, 95% CI 0.62-1.20) and did not increase the proportion of women who achieved congruence between their preferred and actual mode of birth (RR 1.02, 95% CI 0.96-1.07, n = 1921 women).(80)

These findings indicate the need for more research on how women gain clarity and confidence regarding their preferences for mode of delivery, so that PtDAs can be designed to better help women determine what matters most to them for birth after caesarean. Second, for women who were sure about their preferences, the lack of congruence between these

preferences and their actual mode of birth is concerning. This suggests that in the interval between being exposed to a PtDA and planning mode of birth, these women either changed their preferences, changed clinical risk status to preclude the opportunity for planned VBAC, and/or were persuaded to make a different decision that was misaligned with their preferences. It also raises the question of *when* women form preferences for birth after caesarean and the optimal timing of exposure to a patient decision aid, whether during the inter-pregnancy interval or in early, mid, or late pregnancy. Similar to the literature on clinician-centred interventions, these findings indicate that in order to make patient-centred interventions effective, it is necessary to have the clinician's perspective on whether they find patient-centred interventions to be acceptable, useful, and feasible in clinical decision-making.

The limitations of PtDAs have been highlighted previously in this chapter, with reference to the *Birth Choices* trial from Australia, which explored the effectiveness of a PtDA for birth after caesarean in two hospitals with differing baseline rates for planned VBAC (20% vs. 80%).(38) This was one of the three trials included in Horey et al. and provides a case example of the challenges of implementing patient-centred interventions that are intended to be used independently by the woman and are not shared in a clinical encounter. Specifically, in the *Birth Choices* trial women's informed preferences for planned VBAC were honoured only in the setting that had supportive infrastructure, resources, and policies.(38)

Findings on the limited effectiveness of provider- and patient-centred interventions to support evidence-based practice for VBAC illustrate the importance of exploring interventions in their context. Interventions that target clinicians in isolation may turn a blind eye to the role

that patients play in choosing mode of birth after caesarean. Likewise, patient-centred interventions designed for use outside of a clinic visit or in the comfort of the woman's home ignore the role of care providers, the health service environment, and policies in supporting or impeding women's informed choices. The following section explores the implementation of SDM interventions and provides further insight into best practices and areas of improvement.

2.6.2 Implementation of Shared Decision Making Interventions

Interventions to support the adoption of SDM in practice have been clinician-centred and have focused on resolving barriers to clinicians' uptake of SDM, primarily through continuing medical education in SDM skills.(146) Légaré et al. conducted a systematic review of health professional barriers and facilitators to implementing SDM in clinical practice (n=38) (147) and a Cochrane Systematic Review of interventions for improving the adoption of SDM by healthcare professionals (n=5).(146) Barriers to implementation of SDM identified at the practitioner (micro) level included lack of self-efficacy to engage in SDM and risk communication with patients; and perceived inappropriateness of SDM in particular clinical situations and patient populations.(147) At the organizational (meso) level, barriers included lack of policies to support widespread adoption of SDM in practice, organizational routines that prohibit SDM activities, costs associated with training care providers and implementing tools to support SDM, and lack of time and reimbursement for SDM.(147) While these findings on implementation of SDM may be applicable to interventions involving decision aids, only six studies included in Légaré et al's two reviews were decision aid interventions and only one study assessed

implementation of a maternity decision support intervention – informed choice leaflets for patients attending Welsh midwifery services.(35)

In the Welsh study, researchers evaluated the use of evidence-based, informed choice leaflets on decisions in maternity care, using observation of 886 antenatal consultations in 13 maternity units in Wales and 383 in-depth interviews with women, midwives, and obstetrical specialists.(35) Qualitative analysis revealed that care provider attitudes and time constraints were barriers to the use of the KT tools. Informed choice was not promoted in the study setting due to care providers’ belief that certain choices (such as elective caesarean for breech presentation) are more “clinically secure” and would afford them protection against litigation. These factors contributed to a culture of patient compliance with care providers’ recommendations. As the authors themselves note, the tools were developed and passively distributed without an understanding of potential barriers and facilitators to implementation.(35) They concluded that PtDAs may be effective in controlled experimental settings, but not in real world care.(35) This study illustrates the importance of patient and provider engagement to fully understand system barriers to implementation. It is important to understand how use of PtDAs may impact care provider workflow so that the tools can be implemented seamlessly into existing practice routines. The study also highlights the importance of understanding how maternity care providers feel about decision aids and SDM in the context of time limitations, fears of litigation, and high uncertainty of outcomes for individual patients.

Elwyn et al. published a series of case studies (n=7) (148) as well as a systematic review of peer-reviewed literature (n=17),(149) both reporting on implementation of “decision support interventions,” a range of tools including decision aids. In cases where some degree of implementation of decision support interventions was achieved, such as positive intention to routinize use of a decision aid or actual adoption in routine practice, care providers trusted the content of the tool, including both its evidence base and reflection of “local” data and clinical realities.(149) Facilitators observed in the literature included skills training for care providers in how to use a decision aid in routine care, as well as “buy-in” and uptake of decision aids by physicians in leadership positions.(149) The most often cited facilitator of implementation was a system to distribute decision aids to patients directly without relying on care providers to initiate patient access to the tools. This systems approach attended to the barriers of competing priorities and time pressures by identifying patients ahead of visits and providing them decision aids to complete in their own time. Additional facilitators to implementation of decision aids involved gaining care provider trust in the content of the tool, including both its evidence base and reflection of “local” data and clinical realities; provision of skills training for care providers; and identification of champions in leadership positions. All studies (n=17) used a “referral model,” where care providers referred patients to decision support, and measured uptake of the decision aid primarily based on counts of the number of tools provided to patients and the number of patients who used the tools.(149) This “referral” approach to implementation was ineffective due to indifference on the part of health care professionals, which stemmed from lack of confidence in the intervention, concern about its impact on

workflow, competing priorities, uncertainty about involving patients in decisions, and ultimately “organizational inertia” toward intervention adoption.(149) Given the studies’ heterogeneous and complex implementation approaches and diverse methods for recording and reporting implementation outcomes, Elwyn et al. concluded that it is premature to draw conclusions about best practices for implementation of PtDAs and that qualitative studies may be better suited for exploring the mechanisms that influence implementation of PtDAs in diverse contexts.(149)

While the literature is not established enough to dictate best practices for implementation of SDM interventions, a common theme emerges from the existing evidence. Regardless of whether the SDM intervention in question is primarily patient-centered or clinician-centered, the development and testing of the intervention should include identifying and attending to the barriers and enablers to its use at the patient, provider, and systems levels. In the case of birth after caesarean decision-making in Canada, barriers and enablers may emerge at the patient and provider level through their attitudes and experiences, at the level of environment with regard to resources that facilitate timely access to caesarean section, and through regional and national policies that support access to VBAC services. Currently, these factors are under-investigated in Canada and internationally.

2.7 Conclusion

In this chapter, I provided a critical analysis of decision-making for mode of delivery after caesarean in the empirical literature. I summarized the international literature on women’s and

care providers' attitudes and experiences with mode of delivery after caesarean, including their perceptions of comprehensive risk in pregnancy and how these perceptions change depending on environmental context, personal experience, and professional identity. I described how women's access to options for mode of delivery after caesarean have changed over time in Canada and comparable international settings in response to evolving evidence and corresponding changes to health policy. I summarized the health service access challenges that have arisen in response to policy changes, with attention to the impact of limited anaesthesia and surgical services on access to VBAC. I then described the clinician- and patient-centred interventions that have been tested to date and their limited effectiveness in increasing women's access to the option of VBAC. I then argued that, in order to be effective, the development of interventions must be preceded by an exploration of the context for decision-making for birth after caesarean, including barriers and enablers to behaviour change and implementation at the patient, care provider, and health service and policy levels.

I identified a number of gaps in the literature I synthesized on women's, care provider's, and decision makers' attitudes toward and experiences with mode of delivery after caesarean, and on the factors that influence implementation of SDM in maternity care. Specifically, in the literature on women's attitudes and experiences with birth after caesarean decision-making there is limited understanding of the following factors in a Canadian context:

- Women's knowledge of their options for mode of delivery after caesarean and the sources of that knowledge.
- Women's perceptions of the safety of planned VBAC.

- The factors that influence women's attitudes toward mode of delivery and their decision-making experience.
- The timing of women's preference formation for birth after caesarean and the optimal timing for women's exposure to SDM interventions.
- The decision-making experiences of women in rural vs urban settings, and under midwifery vs physician care.
- Women's perceptions of the barriers and facilitators to access of planned VBAC in their communities, including the factors related to their hospital environment.

In the limited literature on care providers' attitudes and experiences, there are a number of topics that are underexplored and warrant further investigation:

- Care providers' perceptions of the safety of planned VBAC in rural vs urban settings, in settings with different levels of surgical service, and among different professions.
- Care providers' approaches to supporting women's decision-making for mode of delivery after caesarean, and how they communicate risks and benefits.
- The influence of liability concerns, fear of professional criticism, and access to anaesthesia on care provider decision-making for birth after caesarean.
- The influence of the SOGC clinical practice guideline recommendations for planned VBAC on women's and care providers' decision-making.
- Care providers' perspectives on the principles of SDM and the use of PtDA tools to support SDM.

Finally, my literature review yielded no studies investigating the perspectives of decision makers in planning services for birth after caesarean.

In response to these gaps in the literature, I explore attitudes toward and experiences with decision-making for mode of birth after caesarean to identify the factors that influence decision-making for mode of delivery in the context of British Columbia. The findings will be relevant to health service environments with similar models of obstetric care, rural populations, and rates of repeat caesarean section (e.g. Canada, Australia, western Europe, and the United States). Stakeholders in these environments may consider how the factors that influence decision-making for mode of delivery may be mediated to enhance women's informed choice while reducing the rate of clinically unnecessary caesareans. In the following chapter I describe the qualitative study design and methods I employed.

Chapter 3: Methods

The goal of this exploratory qualitative research was to explore attitudes toward and experiences with decision-making for mode of delivery after caesarean from the perspectives of: a) women with a history of caesarean, b) care providers who provide maternity services, and c) decision makers who plan and manage health services for birth after caesarean. I was specifically interested in investigating the factors that support or impede evidence-based practice for birth after caesarean in British Columbia.

This study was conducted in partnership with knowledge users in Optimal Birth Fraser Health (formerly the Fraser Health Caesarean Section Task Force), a multidisciplinary group of clinicians and health service decision makers with an interest in increasing vaginal delivery rates. These partners provided input in developing the study design and interpretation of data to ensure that the study results would be relevant to the needs of knowledge users in the BC health care system, and to increase the likelihood that clinicians and service decision makers would accept and trust my findings on women's experiences of decision-making experiences in BC health authorities. These strategies were consistent with my integrated knowledge translation (iKT) research approach, which is described in a separate section (Chapter 7).(9)

3.1 Research Design: Constructivist Grounded Theory

Grounded theory focuses on the process of generating theory through specific techniques and developing theory from the data, as opposed to from a priori assumptions.(150) As a theory-methods package, grounded theory emphasizes, quite literally, that theory is *grounded* in the

data collected and emerges from the research *process*. The techniques first laid out by Glaser and Strauss in *The Discovery of Grounded Theory* (82) are systematic strategies for qualitative research practice. As the scientific method gained prominence in institutions during the 1960s, qualitative methods were criticized for lacking objectivity, validity, and for failing to fit within positivist research designs. Glaser and Strauss developed a qualitative approach that addressed these criticisms, proposing that qualitative analysis could be systematic, logical, and could generate theory. They drew on their respective heritages in quantitative methods (Glaser) and Chicago school pragmatism and symbolic interactionism (Strauss). In sum, the characteristics of Glaser and Strauss's grounded theory approach include: simultaneous data collection and analysis; generating analysis from the data, not from extant, deductive hypotheses; making comparisons between data throughout analysis (constant comparison method); achieving saturation; developing theory at each stage of data collection and analysis; memo-writing to develop analysis and identify relationships in the data; theoretical sampling, not sampling for population or representation; and conducting a literature review after the analysis.(84)

Throughout the last two decades of the twenty-first century, qualitative researchers responded to new criticisms that grounded theory was, ironically, overly positivistic. In response, they adapted grounded theory guidelines for post-positivist perspectives. While Strauss, with Juliet M. Corbin, began developing the method in the direction of technical procedures and strategies of verification, with continued attention to pragmatist and interactionist processes,(151) Adele Clarke,(152) Kathy Charmaz,(84) and others revised

grounded theory approaches to respond to social constructionist paradigms. The concept of *constructionism* assumes that we construct reality through shared language.(152)

Constructivist grounded theory is a set of flexible principles and practices that complement other methodological approaches to qualitative data analysis. The approach emphasizes the importance of researcher reflexivity, flexibility, and positionality. In the founding text on this methodology, *Constructing Grounded Theory*, Charmaz argues that, “a method provides a tool to enhance seeing but does not provide automatic insight. We must see *through* the armament of methodological techniques ... A keen eye, open mind, discerning ear, and steady hand can bring you close to what you study and are more important than developing methodological tools” (p. 15).(84) Charmaz employs a visual metaphor to describe the importance of standpoints in knowledge construction, and to emphasize that researchers should be reflexive about their positions during the research process in order to access different views of the studied phenomenon: “The flexibility of qualitative research permits you to follow leads that emerge ... Like a camera with many lenses, first view a broad sweep of the landscape. Subsequently, you change your lens several times to bring scenes closer and closer into view” (p. 14). Following feminist and standpoint theorists, Charmaz emphasizes that researchers and research participants are socially located – they make assumptions about reality, have biases, social positions, and take actions that reflect their individual/collective views – and that researchers’ understanding of the world is constructed “through our past and present involvements and interactions with people, perspectives, and research practices” (p. 10). Thus, data and theory are *constructed*.

In *Constructing Grounded Theory*, Charmaz adopts a social construction perspective and builds on the work of Glaser and Strauss to suggest techniques for consciously constructing research data and theories.(84) For instance, with regard to intensive interviewing, she emphasizes a reflexive approach in which interviewers are attuned to their own and participants' past and immediate identities, to the participants' comfort level, to relative differences in power and status, and to the effect of gender, race, and age on the interviews. Charmaz also encourages researcher reflexivity during data analysis by questioning one's perspectives and practices to avoid forcing data into preconceived codes and categories:

Coding should inspire us to examine hidden assumptions in our own language as well as that of our participants ... We may think our codes capture the empirical reality. Yet it is *our* view: we choose the words that constitute our codes. Thus we define what we see as significant in the data and describe what we think is happening. (p. 47)

One strategy, she suggests, for maintaining this type of "objectivity" is by coding closely to the data (with *in vivo* codes where appropriate) and by showing actions by using gerunds (verbs that function as nouns, e.g. "experiencing trauma"), as encouraged in Glaser's early work. Charmaz argues that theories evolve as social constructions and *depend* on the researcher's view. Consequently, researchers must exercise a great deal of reflexivity to identify how the

studied experience is embedded within larger, often hidden, structures and hierarchies of power; that is, how the theory is connected with its social context.

A number of characteristics of grounded theory can pose challenges for applied qualitative health researchers. Traditional grounded theorists argued that, in order to minimize the influence of extant literature on analysis, the researcher should not complete a literature review prior to the study.(82) As discussed in Chapter 2, this notion of objectivity makes little sense for applied health researchers whose understanding of the literature leads to identification of gaps between knowledge and practice. Further, a grounded theory analysis results in coded, representative selections of text that are abstracted from participant narratives. While this serves to produce a theory that is grounded in participants' stories, the stories themselves become fragmented. Participant narratives reveal rich insights into individual behaviour, while coded interview selections from grounded theory provide insight into social processes.

In the context of these limitations, and to enhance the potential for my theory to be relevant and useful for patients, care providers, and decision makers, I sought to be flexible with grounded theory methodology and follow the "methodological emancipation" approach promoted by qualitative nursing researcher Sally Thorne.(153) I used methods and approaches that logically followed my applied research questions, rather than "the dictates of an extant methodological package." For instance, I revisited my literature over time as new questions emerged from data collection and analysis, and attempted to integrate rich participant narratives into my analysis (see Chapter 6). In the following sections, I describe the methods

undertaken for this dissertation, which were inspired by Charmaz's constructivist grounded theory.

3.2 Setting

British Columbia is a province of 4 million people located on the west coast of Canada. There are approximately 40,000 live births annually in the province, of which 25% take place outside of major urban centres. The geography of the province is diverse and its communities are located primarily along coastlines and in mountainous valleys. In many regions, transportation is a challenge due to seasonal and inclement weather. Women who have had a previous caesarean section typically plan future deliveries in hospitals with obstetrical services capable of providing "timely access" to emergency caesarean section (e.g. within 30 minutes from decision to incision). The Society of Obstetricians and Gynaecologists of Canada provide this recommendation for timely access in their clinical practice guidelines for planned VBAC.⁽¹³⁾ Women may choose from a registered midwife, family physician, or obstetrician for their primary maternity care, while nurses provide additional bedside care during labour and delivery. Women may also plan a VBAC in their home or a homelike environment attended by a registered midwife, although the practice of home VBAC (HBAC) is controversial.⁽¹⁵⁴⁾ In rural communities, an obstetrician, general practitioner with enhanced surgical skills (GPESS) or, on occasion, a General Surgeon may lead caesarean section services.

An initial purposive sample of British Columbia communities was selected to explore the phenomenon of decision-making for birth after caesarean. Each "community" was defined as

the population catchment residing within 2 hours travel time of a hospital facility with obstetrical services that support planned VBAC.(13) Communities that met these criteria were further investigated with the purpose of identifying four sites that represent the diversity of obstetrical service models across the province based on the following factors:

- **Annual numbers of deliveries:** Rates of annual local deliveries were derived from BC Perinatal Database Registry surveillance reports on maternal discharges by facility for 2013/14.(155) I aimed to include communities with low (<500), medium (500-1500), and high (>2500) numbers of annual deliveries.
- **Surgical obstetric model of service:** Service models were derived from the BC Perinatal Database Registry surveillance reports on delivery provider type in each facility with planned obstetrical services for 2013/14.(156) There are four models of caesarean section services in the province: obstetrician led, GPESS led, General Surgeon-led, or mixed (obstetrician + GPESS) model of care. Each obstetrical model of care supports primary maternity care provided by solo or group practices of obstetricians, GPESS, family physicians, and/or registered midwives. Either a physician or a midwife may lead a primary maternity care practice. I aimed to represent all four models of surgical obstetric care in my sample.
- **Geographic diversity:** There are five regional health authorities in the province (Vancouver Coastal, Fraser, Interior, Vancouver Island, and Northern). I aimed to include both rural and urban communities in at least two regional health authorities. Rural was defined as populations living outside the commuting zones of larger urban centres with

populations of 10,000 or more.(157) I aimed to include both rural and urban communities.

- **Annual rate of VBAC by hospital:** VBAC rates were taken from the Fraser Institute British Columbia Hospital report card for the indicator “vaginal birth after caesarean, uncomplicated” for 2008-2009, which is the most recent, publicly available hospital level report on the rate of vaginal births that occurred among mothers who delivered previously by caesarean section in the province.(158) I aimed to include communities with VBAC rates that were low, average, or high in comparison to the provincial mean actual VBAC rate for that period.

I identified the initial sample of communities in consultation with my supervisory team (JK, PJ). Additionally, following the knowledge translation strategy for this study, I consulted with Optimal Birth Fraser Health regarding inclusion of study sites in the health authority. Members, including my study clinical co-investigator (SK), requested that I include an additional inclusion criterion: in-house vs. on-call access to caesarean section surgical and anaesthesia services.

3.3 Participants

Participants included: (a) Women who were of childbearing age (18-45 years old) in British Columbia, who had given birth by caesarean within the previous 3 years, were considering a future pregnancy, were eligible for VBAC delivery, and lived in the study site catchments; (b) family physicians, midwives, and primary and consultant obstetricians who provided maternity care in the study sites; and (c) administrators, directors, and managers who were responsible

for maternity services in the study sites. Participants had to be English-speaking in order to participate.

Recruitment of childbearing women occurred through three methods: (a) third-party recruitment by maternity clinic staff, public health nurses, and leaders of community-based perinatal health programs (e.g. Healthiest Babies Possible); (b) poster advertisement in antenatal clinics and in community settings frequented by pregnant women and new mothers (i.e. community centres, libraries, cafés, and pre- and post-natal fitness classes); and (c) “snowball” sampling whereby participants shared the study information with potentially eligible women in their social networks, both in-person and via Facebook, and interested women then contacted the study team. Through email and/or phone calls I spoke with interested women to determine their eligibility and schedule an interview. Women were compensated for their research participation by having their names entered in a single draw for a \$200 gift card to an online children’s clothing store, Gap Kids.

Care providers and decision makers were sought through third-party recruitment by “gatekeepers” in the study sites who had collaborated in previous research studies, and included community-based research partners, participants from previous research studies, or local opinion leaders identified by health authority perinatal leads. This was also followed by a “snowball” technique to identify other key participants. Individuals identified were contacted initially by phone and/or email to provide a description of the study, request their involvement, and provide contact information if they chose to participate. Physicians and midwives were

compensated for their research participation with a \$50 honorarium. Nurses and decision makers were offered a \$25 gift card to a local café for their participation.

3.4 Theoretical Sampling

At the outset of data collection, initial purposive sampling provided a point of departure by identifying participants in each of the study communities based on the demographic inclusion criteria listed above. A second method, theoretical sampling, began after analytic categories were developed in order to seek participants, statements, events, or new settings that illuminated emerging categories. In my approach for theoretical sampling I anticipated that these activities might include expanding the initial sample criteria to include other participants (e.g. nurses, women's family members), returning to re-interview old participants, or exploring a new setting or "deviant cases" – highly unusual or outlier cases of attitudes or experiences with birth after caesarean. These new participant groups were then added to the sampling frame and their interviews were used as data. Sampling continued until categories suggested by the data demonstrate what Dey terms "theoretical sufficiency," that is, "when gathering fresh data no longer sparks new theoretical insights, nor reveals new properties of these core theoretical categories."(84) I anticipated that, based on sampling in similar qualitative studies, that with 1-2 interviews per person, 20-30 participants may be needed in each of the participant categories (i.e. childbearing women, community care providers, decision makers).(159)

Finally, I engaged in informal interviews with key informants outside of my participant sample, including a malpractice lawyer and opinion leaders from BC Women's Hospital, the largest maternity unit in western Canada located in Vancouver Coastal Health Authority. These were not formal research interviews and their purpose was to further understand the context of decision-making for birth after caesarean in British Columbia. I did not include these interviews in analysis.

3.5 Data Collection

Data were collected between April and August 2015. I conducted all in-depth, open-ended interviews. Interviews were audio-recorded and took place either in the participants' home, place of work, or a location convenient to them, and lasted 60-90 minutes. Although one-on-one interviews were sought, opportunistic group interviews were also conducted with pairs of participants where it was difficult to conduct interviews individually due to participants' time or space constraints.(160) Additionally, participant observation took place during study site visits, and was documented through empirical observation field notes and interpretive memos.(160) These notes were not included in analysis as one might do in an ethnographic study. Rather, my participant observation functioned as "hanging around a scene" (161) to gain information about the study setting and interactions between stakeholders. For instance, in one small rural community a decision maker gave me an informal tour of the labour and delivery ward, where I documented posters and pamphlets in clinic waiting rooms, layout of rooms, interactions between the decision maker and other care providers, and the distance between the ward and

operating room. I used these field notes to document my hunches and insights outside of formal interviews, which informed my recruitment and interview process.

Informed consent was an ongoing and iterative process. Each participant received a copy of the consent form at least two days prior to their interview to allow them time for review. During each interview, I took aims to be “ethically vigilant” and respond if the participant was experiencing distress.(162) If the participant went off topic in order to “tell their story” I let the story unfold before redirecting the discussion back to my interview guide, so as not to coerce the participant and honour their priorities for the interview as well as mine. I also recognized that many women participants treated the interview as a therapeutic space where they could reveal for the first time their emotions about their birth experiences. During the interview I warned women if we were about to discuss potentially emotional or sensitive topics and reminded them that they had the right not to answer any question. I took time after these interviews to recoup with participants, discuss something lighthearted, and ensure that they felt emotionally capable of returning to work or to caring for their child.

At the outset of the interview, the lead question for interviews with childbearing women was, “Tell me briefly about your labour and delivery experiences.” Subsequent opening probes asked about participant behavior and experiences and included, “What did you plan for your birth(s) after caesarean – a planned VBAC or an elective caesarean?,” “Tell me how you made the decision to have a VBAC/repeat caesarean,” “Tell me about your care provider’s role in making the decision,” and “What information did you use to help make your decision?” Intermediate interview questions explored participant attitudes toward repeat caesarean and

VBAC. Interviews with care providers and decision makers explored similar questions related to individual behavior, attitudes, and experiences, in addition to policy and organizational barriers and facilitators to VBAC. Appendix A provides the detailed interview guides for women, providers, and decision makers. These guides functioned as the point of departure for interviews, however concepts emerging from data analysis were pursued through additional or different questions and probes, following Charmaz's grounded theory approach.(84)

Further, following Charmaz's interpretation of Glaser and Strauss's constant comparison method,(84) memo-writing occurred throughout data collection and analysis. Memos are informal notes taken successively from the beginning of data collection to capture thoughts, identify patterns, processes, and assumptions embedded in the data, identify gaps in data collection, and crystallize questions and directions to pursue. As an analytic method, memo-writing helped move focused codes into conceptual categories, helped to test and compare the categories against other concepts in the area of behavior change (i.e. capability, opportunity, motivation),(163) and functioned as a record of the research and the analytic process.

3.6 Data Analysis

Data analysis took place from August-November 2015. Audio-recordings were transcribed and to develop the codebook (a list of derived themes and categories) for analysis, my supervisor (JK) and I independently read a sample of six transcripts (two from each participant group). She and I each first analyzed interview transcripts using open and *in vivo* coding to explore for analytic ideas and identify properties of emerging concepts. Constant comparison of data

identified similarities and differences within and among transcripts. As provisional categories were developed and relationships between them identified, analysis shifted to focused coding to identify and organize codes into batches of similar or related phenomena. By comparing data to data, she and I then developed focused codes. Finally, theoretical coding allowed for sorting, synthesizing, and organizing the data into major conceptual categories. The evolving codebooks are included in Appendix B.

Together with my supervisor, we then compared our codebooks for congruency before the transcripts were coded in their entirety. When compared, the two codebooks had conceptual congruency indicating we identified similar phenomena in the transcripts. However, the codebooks had different semantic approaches to labeling these phenomena; one followed Charmaz's approach of using gerunds to describe action and of explicating implicit actions and meanings (SM);(84) while the other followed a pragmatic approach that drew on applied, health planning frameworks (JK). To reconcile the semantic differences between our analyses and achieve greater congruency, I merged the two codebooks following Charmaz's approach and coded a further two transcripts to test the merged codebook for fit and relevance. Finally, she and I discussed the merged codebook and agreed that its categories achieved both fit and relevance; the codebook had crystallized participants' experiences and made implicit processes and structures visible.(84)

A research assistant skilled in qualitative health research analysis (EW) and I then independently coded the transcripts. To ensure consistency in interpretation of the codebook and application of its concepts, we coded a sample of three transcripts at the outset. There was

almost perfect consistency between our coding at this level. Coding was facilitated by use of NVivo analysis software (version 11) for organization and documentation of the transcript data. During the coding process, I also returned to my field notes to make comparisons between the early analyses and theories I had developed during my data collection, and the analysis that developed from coding and situational maps. The field notes sparked my memories of each interview and the key concepts that each participant focused on in their story of decision-making.

Throughout the analysis I gave presentations to Fraser Health stakeholder partners, including my clinical co-investigator (SK). These presentations described emerging findings and I asked my knowledge partners to give “member-checking” feedback on what the preliminary study findings meant to them in their context and experience. Dissent was noted and unless a factual error needed correcting the findings were unaltered. A full description of integrated knowledge translation activities can be found in Chapter 7.

Throughout my analysis and writing of results, I also hand-drew “situational maps.” In this grounded theory analysis technique, the researcher draws visual representations to help in analyzing relations between elements of the study data.(152) I illustrated the elements involved in decision-making for birth after caesarean (people, organizations, objects), drew the relationships between them, and plotted the attitudes and beliefs taken up by participants. In using this analytic approach I aimed to make visible the relationships between categories that were emerging in my data and grapple with complexity and heterogeneity in participants’ narratives. I created individual maps for emerging categories that were particularly complex,

such as women's decision-making process (a final version of this map is included as Figure 4.1). This activity also helped me to identify and situate individual narratives that conflicted with the majority of participants' experiences.

3.7 Reliability and Validity

Following Morse's definition of qualitative rigour, verification strategies were pursued throughout the research process to ensure reliability and validity.(164) Strategies include those listed above – constant comparison, keeping a data trail through memos, and sampling to theoretical sufficiency. As well, following a constructivist standpoint, I adopted a flexible and responsive approach to ensure that the research question, method, and analytic techniques fit with the data to guarantee the validity of the method.(164) This included bi-weekly discussions with my supervisory team about categories emerging from data collection and analysis. I also engaged in reflexive strategies to check my assumptions about the data. Reflexivity is a core method in qualitative research in which the researcher recursively considers how their beliefs and experiences influence the research process.(165) In this dissertation, my reflexive strategies included engaging in a one-hour memoing exercise prior to beginning coding of the transcripts, where I rapidly wrote down my assumptions, biases, and key observations from the data collection period. This "brain dump" activity aimed to help me confront my preconceived ideas and reflexively question my perspectives on the phenomenon with the aim of helping keep my analysis grounded in the transcripts.

I also had “insider status” with each of the stakeholder population groups because of my many years of experience as a labour and delivery doula and breastfeeding counselor, and as an applied health services research assistant in rural maternity care. I also had longstanding relationships with care providers and decision maker stakeholders through my mother, who has practiced as a doula in the greater Vancouver region for the past 25 years. This combination of experiences provided me with an understanding of the language and cultural norms of maternity health services in BC. I adopted a reflexive approach to ensure that my background and personal relationships did not influence my data collection and analysis. In my field notes and memoing, particularly immediately after conducting an interview, I noted how my beliefs and past experiences were similar/dissimilar to those of participants.

3.8 Developing a Theory

Throughout analysis, I took aims to reveal my preconceptions and assumptions about the phenomenon – what I had read, observed, and studied in the past. I wrote reflexive memos, discussed the analysis with my supervisors, and checked that each code “earned” its way into the analysis.(84) After writing the narrative of my results (Chapters 4 and 5), I had a “contextualized analysis” that theorized connections between individual stakeholders, local communities, and larger social and organizational structures. I had identified processes, outlined their phases, and described them – the “how” of decision-making for birth after caesarean. I was then encouraged by committee members (JK, KC) to keep up my “analytic momentum” and push my analysis a step further into theorizing *why* participants “construct meanings and actions in specific situations.”(84) As Charmaz explains:

“Recall that Glaser (1997, 1998) advises you to begin the analytic process by asking ‘What is this data a study of?’ (1978: 57). If we ask the question at *each* stage of the analytic process and seek the most fundamental answer that fits, we might discover that particular meanings and actions in our studied world suggest theoretical links to compelling ideas that had not occurred to us.” [p. 138, emphasis included] (84)

I raised into theoretical concepts those categories that explained participants’ attitudes and experiences most effectively, provided an interpretive frame for the study, and offered an abstract understanding of the relationships between categories. The method for my theorizing consisted of memoing, conversation with committee members and colleagues, and returning to the data again and again to consider which categories had the most analytic weight.

3.9 Theoretical Matching

An orthodox inductive approach, as proposed by Glaser, suggests that theory development should be grounded only in the data, emerge from the data, and not be imposed using extant theories or categories.(166) Another school of thought proposes that theory can be both grounded *empirically* in the data as well as grounded *theoretically* in pre-existing extant theories. As researchers Goldkuhl and Cronholm write in their methodological work on grounded theory:

“If one ignores existing theory, there is a risk of reinventing the wheel. As researchers we often build new knowledge on existing knowledge. An isolated theory development also means that there is a risk for noncumulative theory development. We believe that it is important to relate the evolving theory to established research during the process of theorizing. Existing theory can be used as a building block that supports the empirical data forming the new emergent theory.”(167)

Theoretical matching may be used to facilitate interpretation of data, to organize an analysis, or to structure the evolving theory.(167,168) I engaged in “theoretical matching” by comparing my emerging concepts to existing empirical literature and theories that helped to explain or contradict the patterns I was observing.(86) The purpose of the theoretical matching was not to test or extend existing theory, or to generalize and decontextualize my local analysis. Nor was the purpose to select the “best” theory for understanding decision-making for birth after caesarean. Rather it served to organize my subjective analysis of emerging concepts in a language and conceptual framework that would further illuminate the behaviours and processes that support or impede women’s access of informed choice for birth after caesarean. This follows Charmaz’s conceptualization of the purpose of theoretical frameworks in grounded theory:

“Researchers who use a traditional quantitative design invoke an established theory and deduce hypotheses from it before conducting their studies. For them, the theory to use in their theoretical framework is already there. In contrast, in a grounded theory study you put your sensitizing concepts and theoretical codes to work in the theoretical framework. These concepts and codes locate your manuscript in relevant disciplines and discourses.” [p. 169] (84)

In discussion with my supervisory team during the study design phase and analysis, we considered different theoretical frameworks that could facilitate this final stage of analysis. I considered a range of process models, determinant frameworks, classic theories, implementation theories, and evaluation frameworks could help explain patterns in participants’ narratives. I considered the Theoretical Domains Framework (169) and Behaviour Change Wheel,(170) which aim to explain the determinants (e.g. barriers and enablers) that influence implementation outcomes. Conversations with colleagues in the School of Population and Public Health led to suggestions of Behavioural Contagion Theory (171) and Normalization Process Theory,(172) which aim to enhance understanding of individual behaviour. However, complex adaptive systems (CAS) offered a lens through which to understand my contextualized analysis, and support the specific argument I wished to make about implementation processes for a health services research audience.

3.10 Ethics

This study was approved by the University of British Columbia Behavioural Research Ethics Board (H15-00319), Fraser Health Research Ethics Board (FHREB 2015-032), and Northern Health Research Review Committee (RRC H 2015-001).

Chapter 4: Seeking Control in the Midst of Uncertainty: Women's Experiences of Choosing Mode of Delivery after Caesarean

This chapter focuses on findings from my analysis of women's narratives. I describe my grounded theory of seeking control in the midst of uncertainty.

4.1 Description of the Sample

Five hospital sites met the study criteria: three in rural northern BC and two in southwestern BC. Participants included: a) women who had had a recent primary caesarean (n=8); b) women who were pregnant with a second child and planning a birth after caesarean (n=7); and c) women who had given birth after caesarean (n=8), half who had planned a VBAC and half who gave birth by planned elective repeat caesarean. Among the 15 women who had had a recent primary caesarean or were pregnant again, their preferences were represented equally: five expressed a preference for planned VBAC, five for planned repeat caesarean, and five were uncertain. Of the eight participants who were considering mode of birth after two caesareans, three preferred VBAC and five preferred repeat caesarean, consistent with their preferences for their first birth after caesarean. One was uncertain. All participants lived with a partner and the majority were born in Canada, had a college diploma or university degree, and were between the ages of 30 and 39. Three women were Aboriginal, one South Asian, and the remainder were Caucasian. Table 4.1 provides a description of participant characteristics, while Table 4.2 provides information on each participant's childbirth histories.

Table 4.1 Demographic Characteristics of Women

Characteristic	N (%)
Region	
Rural	16 (69.6)
Urban	7 (30.4)
Ethnicity	
Aboriginal	3 (13.0)
Asian	0 (0.0)
Caucasian	19 (82.6)
South Asian	1 (4.3)
Age	
< 20 years	0 (0.0)
20-29 years	5 (21.7)
30-39 years	16 (69.5)
> 40 years or more	2 (8.7)
Living with a partner	
Yes	23 (100.0)
No	0 (0.0)
Annual household revenue	
< \$35,000	1 (4.3)
\$35,000-\$70,000	8 (34.8)
>\$70,000	14 (60.9)
Highest level of education received	
Graduated high school	1 (4.3)
College or Technical/Trade	7 (30.4)
University degree	15 (65.2)

Table 4.2 Childbirth Histories of Participants

Woman	Previous births	Induction	Indication for caesarean	Past delivery preference	Current/future delivery preference	Primary provider	Region	Mental Health*
001	1) Planned CS 2) ERCS	--	Breech Maternal request	Vaginal CS	CS	Midwife	Urban	--
002	1) Unplanned CS	Yes	Failure to progress	Vaginal	VBAC	Midwife	Urban	Anxiety
003	1) Unplanned CS 2) Pregnant	No	Failure to progress	Vaginal	Uncertain	Midwife	Urban	Anxiety
005	1) Unplanned CS 2) ERCS 3) Pregnant	Yes	Failed induction Recommended ("small pelvis")	Vaginal CS	CS	Family physician	Urban	--
006	1) Planned CS 2) Pregnant	--	Placenta previa	CS	CS	Family physician	Urban	--
007	1) Unplanned CS 2) Pregnant	No	Dystocia	Vaginal	VBAC	Midwife	Rural	Depression
010	1) Unplanned CS 2) CS during VBAC	No No	Dystocia Fetal distress	Vaginal VBAC	Uncertain	Midwife	Urban	Depression
024	1) Planned CS	No	Breech	CS	CS	Family physician	Rural	--
025	1) Unplanned CS	No	Failure to progress	Vaginal	VBAC	Midwife	Rural	--
028	1) Unplanned CS	No	Dystocia	Vaginal	VBAC	Family physician	Rural	Depression
029	1) Unplanned CS	No	Failure to progress	Vaginal	CS	Midwife	Rural	--
030	1) Unplanned CS	No	Dystocia	Vaginal	Uncertain	Family physician	Rural	--
031	1) Unplanned CS	Yes	Failed induction	Vaginal	CS	Family physician	Rural	--

Woman	Previous births	Induction	Indication for caesarean	Past delivery preference	Current/future delivery preference	Primary provider	Region	Mental Health*
034	1) Unplanned CS 2) Pregnant	No	Failure to progress	Vaginal	Uncertain	Family physician	Rural	Anxiety
035	1) Unplanned CS 2) VBAC 3) Pregnant	No	Fetal distress	Vaginal VBAC	VBAC	OB	Rural	--
036	1) Unplanned CS 2) Pregnant	No	Failure to progress	Vaginal	VBAC	GPESS	Rural	--
037	1) Unplanned CS	No	Failure to progress	Vaginal	Uncertain	GPESS	Rural	--
039	1) Planned CS 2) Pregnant	--	Breech	CS	Uncertain	OB/GPESS	Rural	--
040	1) Unplanned CS 2) VBAC 3) VBAC	Yes	Failure to progress	Vaginal Home VBAC Home VBAC	Home VBAC	OB/Midwife	Rural	Depression
045	1) Unplanned CS 2) Pregnant	No	Failure to progress/Malposition	Vaginal	VBAC	OB/GPESS	Rural	--
048	1) Unplanned CS 2) ERCS 3) Pregnant	No	Failure to progress Maternal request	Vaginal CS	CS	OB/FP	Rural	Depression
049	1) Unplanned CS 2) VBAC	No	Failure to progress	Vaginal VBAC	VBAC	OB/Family physician	Rural	Depression
054	1) Unplanned CS 2) ERCS 3) Pregnant	No	Fetal distress Recommended ("big baby")	Vaginal Uncertain	CS	Midwife	Urban	--

*Self-reported postpartum mental health state after primary caesarean

CS: Caesarean; ERCS: Elective repeat caesarean; GPESS: General practitioner with enhanced surgical skills

Analysis revealed few differences between the experiences and attitudes of women who lived in rural communities, compared to their urban counterparts. Some rural women lived one to two hours from the hospital facility and had the option of giving birth in a different community where care providers expressed less support for planned VBAC. These participants traveled to one of the study communities to secure a planned VBAC. Rural women also had less access to midwifery care. I did not observe any differences in decision-making by income level or education, however this may reflect my small, relatively homogenous sample. Also, for this study I did not aim to explore the intersection of socio-cultural differences and decision-making.

4.2 Results

Analysis of participants' narratives revealed that women's experience of decision-making for birth after caesarean was a process of "seeking control in the midst of uncertainty." Women sought control through their decision-making process, which was organized around six conceptual phases: *reflecting on their birth, clarifying their values, becoming informed, considering the feasibility of options, deliberating with the care team, and making an actual choice*. These key themes are presented in Table 4.3.

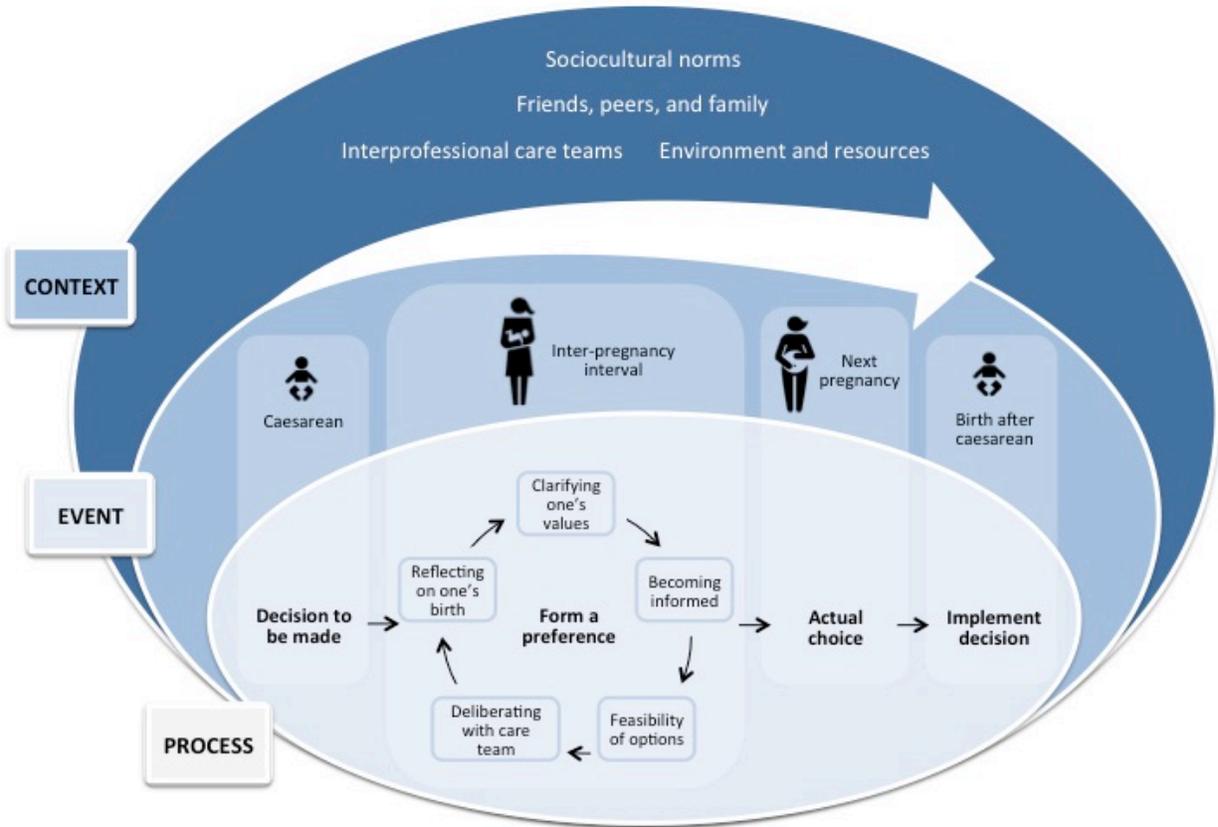
Table 4.3 Themes and Subthemes Emerging from Women’s Narratives

Core Theme	Subtheme
Seeking control in the midst of uncertainty	Reflecting on their birth
	Clarifying their values
	Becoming informed
	Considering the feasibility of options
	Deliberating with the care team
	Making an actual choice

Figure 4.1 illustrates these subthemes. The phases of women’s decision-making (“Process”) corresponded with different events in women’s childbearing years (“Event”), and were influenced by external factors (“Context”). The figure was developed based on analysis of findings from my analysis of women’s interviews and then compared with an existing conceptual framework on “interprofessional shared decision-making” developed by Légaré and colleagues.(52) As described in Chapter 3, comparing my emerging theory with existing extant concepts helped to explain or contradict the patterns I was observing. Comparison with Légaré’s framework also helped to organize my subjective analysis of women’s attitudes and experiences using conceptual terms and an organizing framework that further illuminated decision-making behaviours and processes.

In the following sections, I provide a qualitative analysis of women’s birth after caesarean attitudes and experiences in each phase of their decision-making process, within the overarching theme of seeking control in the midst of uncertainty.

Figure 4.1 A Conceptual Map of Women’s Decision-Making



4.2.1 Seeking Control in the Midst of Uncertainty

Women who had an unplanned caesarean during first or second stage labour (n=19) typically felt a loss of control during their births due to overwhelming labour hormones, labour interventions, or unexpected events that precipitated a caesarean. Those participants who had an unplanned caesarean described the moments in their birth where they experienced feeling “out of control,” or “losing control.” This referred to losing control over their body and/or losing control over their decision-making autonomy. As one urban mother described,

“You’re in control giving birth to a certain degree and then having to have emergency C-section, you feel out of control. Especially like, with the epidural I could feel [pushing], and I didn’t know I was going to be able to do that. No one told me I thought I would’ve been numb from the waist down. But then I had a spinal for the c-section and I did not like that feeling. Obviously I know that I wasn’t going to be able to feel [the obstetrician] cutting me open. It happened so fast too, so it was like, you have to surrender control and you have to trust whoever your care providers are.” (010)

Making the decision for birth after caesarean was a process of seeking and regaining control over their birth experience. Some participants described this as seeking control over decision-making authority, which was connected to their sense of self, identity, and autonomy. As one woman articulated regarding her choice for planned VBAC:

“I want to be that active participant. I don’t want to be the bystander in my own delivery. I have no interest in, I’m not the-- (Laugh) My best friend needs to be the center of attention and I don’t need to be the centre of attention, but I don’t want to be the person it’s happening to. I almost felt like a victim, Right? Like, you know like things happen that you can’t control. I don’t like to use the word victim and I don’t mean to offend people who are you know, victims of crime and stuff. It’s obviously a different matter, but when you’re put in these situations, your choice is taken away. You know? And I feel that, yeah, so to regain my choice and my (Pause) I guess my standing as a mom, to reclaim that [through VBAC], as weird as that sounds.” (002)

Women described how they engaged in strategies to ensure control as an active participant in decision-making, such as communicating their delivery preferences clearly to a partner or doula, printing out a “birth plan” for their care team. Others sought midwifery care, which they perceived to be more supportive of women’s choices. Some women who planned VBAC struggled to cope with the uncertainty of the outcome of labour.

Participants extended this concept of control to include both control in the decision-making experience and the childbirth experience too. One woman described the importance to her of having control over the feeling of her delivery because her previous unplanned

caesarean had triggered postpartum depression and anxiety. She described her process of planning a repeat caesarean as a strategy of seeking control and avoiding uncertainty:

“I need to plan this [next birth] so that it helps me keep this [anxiety] in control. So, that was a deciding factor too I think. Going into having a VBAC would be giving up that control that I was working for to keep the postpartum [depression and anxiety] away so that added to it too. That was like no, I am going to plan this c-section and then I am going to plan my doctors around it ... Being able to control the c-section and being awake for it and not having such a rush, like things happening so fast. Because once they actually go to the c-section part, once I actually got into surgery, it was so hectic right? With this [repeat caesarean] it’s calm. Everyone’s happy. Everyone knows what to expect. You come in, and everyone is greeting you, and so, it helped a lot.” (048)

4.2.2 Reflecting on the Prior Birth Experience

Each participant’s first birth experience was the single most influential factor in informing her preferences for birth after caesarean. Women who had an unplanned caesarean described a first birth experience characterized by losing control of their expected birth process, becoming emotionally and physically depleted, and experiencing “failure.” Some described this as a sense of social failure in the eyes of their friends and peers at not experiencing vaginal birth as a “female right of passage” (024), while others expressed a sense of personal failure at not having

achieved their desired birth in spite of their education and planning. In contrast, the four women who had elective caesareans for their first child, for breech presentation (n=3) and placenta previa (n=1), characterized their caesarean deliveries as friendly, predictable, and calm. All feared the uncertainty of a vaginal delivery and consequently leaned toward repeating the caesarean experience. However, one participant who had a caesarean for breech presentation in a rural community described the caesarean itself as a negative experience:

“I just remember being on that table and everything is bared, like ‘we’re going to put a catheter in you now’ and you just feel so, so vulnerable. Your arms are tied up to the sides, your legs are splayed, and you can’t see anything ... I didn’t really get to see her right after other than the quick peek over the curtain. I was really upset about that, but you know what can I do really?” (024)

For all participants the most negative attribute of their caesarean experience was being immediately separated from their newborn for at least one hour following delivery. This period lasted longer and was more disorienting for women who received general anaesthesia. Women described that they felt anxious, abandoned by their nurses, and confused about the location and wellbeing of their newborn. This was especially challenging for participants in one urban hospital site who were told that local policy was to keep moms and babies roomed together post-surgery. Many reported that the loss of this first hour with their first baby had far-reaching effects on their ability to breastfeed and bond. One participant who was planning a VBAC felt

that her primary caesarean made her feel detached from her daughter: *“The bonding. I really feel like I missed out on that. That’s hard to talk to anyone about ... [Cries] I lots of time feel she is not my baby. I love her but I felt like she was a stranger when she came out [Cries] and it took months before I felt like I got to know her”* (028).

Nine women described experiencing postpartum depression and/or anxiety and expressed that their mental health issues began with the emotional trauma of being separated from their baby in the immediate postpartum. For many, this anxiety was directly related to being separated from her baby post-caesarean: *“They told me she was fine, but who knew? I didn’t because I was in the post-op recovery room between two people who were fighting for life. I was just paralyzed on the bed ... You’re completely helpless physically, emotionally. You’re locked away in a room somewhere away from your baby. It’s absolutely horrific [Laughs]. The worst part is definitely that recovery”* (002).

Reflecting on their birth experience was a way for women to clarify what mattered most to them, to figure out the gaps in their knowledge of childbirth options, and to determine what information and resources they needed to fill in those gaps. During their inter-pregnancy interval, women consolidated and integrated new information and experiences with the memory of their first births. As such, each woman’s primary caesarean section experience was the baseline reference point for her decision-making process for future deliveries.

4.2.3 Clarifying Values

Participants in this study entered their first pregnancy with opinions about the desirability of the different characteristics of vaginal and caesarean birth. These opinions changed after having a primary caesarean. Throughout her inter-pregnancy interval each woman engaged in a process of “values clarification” where she considered the extent to which the positive and negative characteristics of vaginal and caesarean birth were personally important to her.(173) In ideal circumstances, values clarification should take place after a patient is fully informed of her options. However, participants in this study considered the importance of birth attributes throughout their inter-pregnancy interval based on their experiential knowledge, typically before seeking or receiving evidence from other sources. Consequently, women’s values were often based on incomplete, poor quality, or incorrect information about mode of delivery after caesarean.

In clarifying their values, many participants began by assigning importance to different attributes of mode of delivery. Each woman described a different set of attributes as being most important to her, and included maximizing their and their baby’s health, discovering their baby’s sex, experiencing skin to skin bonding in the immediate postpartum, maintaining the strength of their core and perineal floor, feeling cared for and respected by one’s care providers, having a quicker recovery, and avoiding emotional trauma. They then estimated their likelihood of experiencing that characteristic in a vaginal versus caesarean birth. Finally, participants described the “trade-offs” they were willing to make, recognizing that the decision for mode of delivery was complex, based on many variables, and they would have to give up

something in order to achieve their desired birth. For most participants, their actual mode of delivery was less important than experiencing certain attributes and outcomes of her labour and delivery.

The clinical risks and benefits of childbirth were less prominent in women's narratives than were social and personal aspects of their experience. Women emphasized that "of course" they wanted a healthy baby above all else, which they felt an elective repeat caesarean would guarantee (although this is not in fact the case). This meant making a trade-off and losing the attributes of a vaginal delivery that were also of importance. As one expressed: "*Ultimately, the safety totally outweighs my experience, but telling [that to] my brain and my emotions is another thing*" (010). Some participants said they would have no qualms about choosing elective repeat caesarean to maximize the health of their baby if it was "family-centred" and included the characteristics they desired from a vaginal delivery: immediate and uninterrupted skin-to-skin bonding in the OR, no separation during postpartum recovery, dim lighting, music of their choice, discovering the sex of the baby with their partner, and in one case, manually colonizing the baby with the mother's vaginal microbiota. As one rural woman expressed: "*The biggest thing is skin to skin after, immediate skin to skin in the OR. It's extremely hard to get here ... I think that would be the number one huge thing for me to try and get that love feeling right after birth*" (007). This participant was willing to accept trade offs, including the increased risk of uterine rupture, in order to maximize her chances of experiencing skin-to-skin bonding after a vaginal birth.

Women's access to resources and social support also influenced their values clarification. Participants who lived far from their immediate families and had limited local social support expressed that recovering from caesarean surgery, including not being able to lift their toddler for six weeks, was a particularly key attribute. This motivated many to plan a VBAC in order to have a short recovery, while others opted for a repeat caesarean so that they could schedule postpartum assistance from family and friends. The impact of surgical recovery on their family was information shared by other experienced mothers, not care providers. Similarly, in communities where the local hospital provided intermittent access to post-surgical rooming together for mother and baby, participants emphasized the importance of staying in the same room as their baby in the immediate postpartum. Participants were afraid of getting their hopes up in case the service was unavailable during the date of their birth after caesarean. Two women were considering planning birth at a nearby tertiary centre where they believed rooming together to be a consistent service.

4.2.4 Becoming Informed

As women reflected on their birth experience and gained clarity about the attributes and outcomes that they valued most, they began to seek out information to fill in their knowledge gaps. This process began in the early postpartum and continued into women's inter-pregnancy interval and subsequent pregnancy.

4.2.4.1 “De-briefing”

No participant who had an intrapartum caesarean felt she had a full understanding of why it occurred. Participants described multiple opportunities for “de-briefing” their birth experience with their care team: during their in-hospital postpartum stay, at newborn wellness check-ups, and at their 6-week post-operative clinic visit. However most did not have a satisfactory conversation with a care provider. One participant described an exchange with her obstetrician at her 6-week post-operative check-up:

“I asked, ‘Was this like a freak thing or was it something wrong with me anatomically, and what are my chances for a VBAC?’ He looked at my chart, and he says, ‘It says persistent OP [occiput posterior].’ And it lead me to believe that he didn’t remember. I mean 6 weeks later, how many c-sections have you done between than and now? I understand that, but for me it was like, ‘that’s my birth story that you just summed up in persistent OP.’ I wanted more information than that. Then that’s when he said, ‘the rates [of successful VBAC] are 60 to 70% and probably less in your case.’” (025)

Three women who were particularly dissatisfied with the limited information shared by their care team chose to review their patient chart. A number of women who received risk information from their care provider felt the outcomes of planned caesarean were predictable while those for planned VBAC were too uncertain: *“It was all pretty like, ‘Well, maybe it [VBAC]*

will work, maybe it won't" (001). To avoid the ambiguity of a planned VBAC, this participant formed an early preference for repeat caesarean.

4.2.4.2 Seeking Knowledge

Between pregnancies, participants actively sought knowledge on birth after caesarean from peers and family, books, and the Internet. They primarily Googled information and landed at sites including Babycenter, WebMD, Huffington Post, and Motherisk. Women searched primarily for statistics on clinical risks and benefits of the attributes of VBAC and repeat caesarean that were important to them. This information gathering helped women gain confidence in their preferred mode of delivery. For instance, one woman researched information on optimal fetal positioning, because she felt her primary caesarean was related to baby's poor position, and on risks of planned VBAC, to counterbalance the poor information provided by family and friends: *"I had people telling me, 'how dare I even consider having a VBAC because it could kill my child.'"* (049)

4.2.4.3 Experiential Knowledge

Women also sought out information in the form of lived experiences and birth stories shared by others. Experiential knowledge helped women to gain certainty with their choice and was a therapeutic process for the eight women who experienced postpartum depression and anxiety. One of these woman collected dozens of quotes about birth "wounds" and "scars" from Pinterest, a social media website that allows users to share images and videos. Another took up

amateur birth photography to witness natural deliveries. One woman became a member of the International Caesarean Awareness Network (ICAN) to connect with others who had experienced caesarean “trauma.” Many participants felt they would be “judged” for having had a caesarean and were selective in revealing their mode of delivery only to women who they expected would empathize with their experience. For most women, the act of engaging in this research interview was part of that therapeutic process and many expressed hope that members of the health care system would learn of their experiences as a result.

4.2.5 Feasibility of Options

All women were certain that a planned elective caesarean would be accessible, if they chose it, but a number of participants who had unplanned primary caesareans questioned whether their original care team and hospital environment were motivated enough to support vaginal birth. Some felt it would be challenging to secure skin-to-skin bonding in the immediate postpartum, based on their experience with the post-operative policies at their hospital. Other participants learned from research on the Internet and birth stories, not their care providers, that they might have limited access to the operating room in the event that they might need an emergent caesarean. As one rural woman who preferred a repeat caesarean described:

“I know a friend of mine, when she was considering a VBAC the doctor had told her not to ... I don’t think he tried to scare her but just said, ‘If your uterus ruptured we have two minutes to get you to surgery to stop the bleeding before you bleed out.”

And we don't keep a surgeon at the hospital 24 hours a day.' ... That was one of her deciding factors to do a repeat c-section." (048)

These access factors motivated some women to seek midwifery care, which they felt would increase their chances of having the vaginal birth they desired. One rural woman who was particularly motivated to have a home birth after caesarean relocated south at the end of her pregnancy to receive care from a lay birth attendant, not a registered midwife. Two participants traveled 1-2 hours from outlying communities to give birth at the study site that had a reputation for supporting planned VBAC and vaginal twin delivery.

4.2.6 Deliberating with the Care Team

Although most of the women's decision-making occurred while they were not patients, they did deliberate with care providers at two time points – immediately before or after their primary caesarean, and during their subsequent pregnancy. For the women who had planned caesareans for their first births, they were told briefly before their caesarean if VBAC would be an option in future.

4.2.6.1 Physician Care

Discussions with physicians were brief and remembered as a one-way information exchange. After their first caesarean, all participants were counselled to wait 18-24 months before becoming pregnant again. In a later discussion, either at the 6 week check-up or in their

subsequent pregnancy, the physician shared a quick heuristic or “pitch” about clinical options, risks, and benefits, tailored to the woman’s individual patient history. Although participants had the opportunity to ask their physician questions, many described feeling rushed. Others were hesitant to share sensitive personal information, or feared that by asking too many questions they would be perceived as a “resistant patient” (049). As a result of having a limited voice in the clinical encounter, few women told their physician about the attributes of mode of delivery that were most important to them.

Women remembered the “gist” of statements that care providers gave them (e.g. the risk of uterine rupture is “very low” or “very rare”), and a few could recall the risk estimates or percentages they were given. Participants often described information and risk statistics provided by physicians that were inconsistent with evidence-based care. For instance, one woman was diagnosed with a small pelvis after “failure to progress” in her first labour: *“The baby can’t fit through. You can’t ever deliver naturally,’ they were telling me ... ‘Miracles have happened,’ they said [Laughs], ‘but your pelvis is too narrow ... This [caesarean] is the only way we’re going to get the baby out’”* (005). Like many participants, she felt that she had no options for mode of delivery after two caesareans: *“If you have two [caesareans], it’s just a given that you’re going to have a third. That’s the information I’ve gotten from other moms and medical professionals, my doctor, the fertility [clinic], and then the OBGYN”* (005).

Care providers recommended repeat caesareans to three other participants for the following reasons: 1) “tearing and bulging” of the uterus, 2) advanced maternal age, and 3) suspected fetal macrosomia. Although these conditions are not contraindications to planned

VBAC according to national clinical practice guidelines (13), participants expressed that there was no deliberation involved. In each case, the care provider made a persuasive recommendation for elective repeat caesarean, presented VBAC as an alternative but unsafe option, and the participant consequently felt that she did not have a choice in the decision-making process. One woman recalled having such a conversation with a care provider in the days following her primary caesarean:

"I said, 'What happens if we want to have another?' And he said, 'Well you're 45. You probably shouldn't have any more.' And I'm like, 'I understand that, but my husband would really like a boy. We'd like two kids.' ... 'Well you'd probably have to have another c-section and you'll have all these other risks.' And I'm like, 'So you're not really listening to me here. You're just looking at age, you're looking at height, and you're just going [snaps fingers] off the bat, this is what we'll do.'" (031).

In one rural community where vaginal birth rates were significantly higher than the provincial average, women found that physicians presented planned VBAC as the default option. One participant who was pregnant with twins described having limited information exchange and no deliberation: *"I went in and because [my pregnancies] were so far between, I figured it was safe for me to do it naturally. They just kept checking throughout the pregnancy ... [The obstetrician] didn't really give a lot of information, just that I was able to have them vaginally and they didn't think a caesarean would be necessary"* (035). While the

recommendation of VBAC was consistent with evidence-based guidelines, the participant was not supported to make a shared choice based on her informed preferences.

4.2.6.2 Midwifery Care

Midwifery clients experienced an informed choice process in which power was distributed evenly and deliberation was spread out over multiple long appointments. However a number wished their midwife had played a greater role in decision-making. Midwives provided more opportunities for deliberation about mode of delivery in comparison to physicians, but delegated decision-making authority to women, which left midwifery clients feeling anxious about the weight of that responsibility.

Midwifery and family physician patients were referred to an obstetrician around the 36th week of their pregnancy for an informed consent consultation. All but one participant had solidified a choice for mode of birth by the third trimester and the risk and benefit “pitch” provided by consultants caused many to be uncertain about their impending delivery. The one participant who was undecided felt the consultant obstetrician pressured her to make a choice during the visit. She regretted signing consent for a repeat caesarean without first deliberating with her midwives and husband (054). The consent form was unique to one hospital site, while women in other settings describing having a verbal discussion only, with no accompanying consent form for mode of delivery. Another participant under midwifery care in an urban community expressed how the consult involved biased presentation of the risks of mode of delivery. She described the encounter as unnecessary and irritating:

"[The obstetrician] shared statistics about real realities of VBACs and uterus rupture and all these different scary things. I was kind of just numb to being there. I didn't really take it all in. I didn't want to be swayed one way or another and wasn't about to schedule a C-section. And, like 'there's that risk [of rupture] without having a VBAC right?' And he was like 'well of course there is.' And I'm like, 'Ok, well, why am I here?' I felt, I don't need the negative, the fear ... [I felt] irritated. Yeah. I knew that if there was a real risk they would tell me. There was risk in everything, so I felt like it was an unnecessary appointment." (010)

4.2.6.3 Actual Choice

Women spoke about the difference between their *preference* for mode of delivery and their *actual choice*. Many women expressed that they did not begin trying to get pregnant again until they felt confident in their preference for VBAC or repeat caesarean and were ready to make an actual choice. For some this was easy, reflecting an early confidence in their preference: *"I made up my mind before I even started trying [to get pregnant again], because I'm a planner. I didn't really talk about my options with my provider before I made my decision. I never, ever at all discussed just signing up for a repeat caesarean"* (007). Others struggled with uncertain and contradictory preferences. One found it took a long time to become confident in making an actual choice for repeat caesarean: *"It wasn't a light decision. This was months in the making. Lots of discussion"* (005).

Of the 23 participants, only six (26%) were uncertain of their preference for mode of delivery after caesarean. Two had recently had an unplanned primary caesarean, three were pregnant after their primary caesarean, and one woman had recently had a planned VBAC that had resulted in an emergent caesarean for fetal distress. They felt that they had time to consider their options and were not ready to make a choice yet. One woman who had recently had her primary caesarean expressed that she had a strong preference for a planned VBAC but was unsure of what she would plan in a future pregnancy; she wanted information on whether or not she would be separated from her baby again after a planned or unplanned caesarean (030). Another participant described being uncertain of her preference for planned VBAC because she had a disproportionately large fear about the relatively small risk of uterine rupture:

“For me, even knowing that there’s a risk is worrisome for me. I, for example, like flying. I used to have to take prescription medication to fly, because I was so anxious about the plane crashing. Well, there’s not a big risk of the plane crashing, there’s more of a risk of getting in a car accident. But no matter what people told me or the information that I could read, there’s still that risk. I’m not sure, I think a plane crash is such a traumatic experience, that that’s why it plays so much on my mind. Same with, you know, delivering a baby. Bleeding out and dying is traumatic, right? Even though there’s a small risk, it’s still, for some reason, something I focus on.” (003)

For many participants who were certain of their preference, it was challenging to make an actual choice because of the difficult trade-offs involved in the decision. For one participant, choosing a repeat caesarean meant giving up the social identity she dreamed of having through a vaginal birth:

“I was making a decision that my children were going to be born by caesarean. It was like the closing of a door to that. And saying, ‘Okay, I’m not going to be that person,’ that I always thought maybe I would be ... The person who is lucky enough [Laugh] to have that beautiful moment where your child comes out and you see it and it lays on you and it’s right there. [Cries] I didn’t get that. So deciding that I was willing to let go of that dream was challenging.” (054)

Participants were aware of how care provider preferences, resource constraints, and input from trusted friends and family all influenced their decision-making process. However, most felt that the actual choice for mode of delivery was ultimately theirs alone. While they felt that being the final decision maker was appropriate, women wanted more support from their care team when making their decision: *“It feels like a lot to kind of be the one making the decision all by yourself”* (001). In addition to deliberating with care providers, all women spoke with their partner and most with another trusted individual, such as a family member or friend. These discussions focused primarily on the logistics of caring for both a toddler and newborn in the postpartum, and strategies to mitigate postpartum depression and anxiety. Most women found

that discussion provided comfort and support, but being the sole decision maker was stressful for many women. They wished their partner had taken some shared responsibility in the choice for birth after caesarean. Regardless of the actual choice women made, many expressed that being an active partner in the decision-making process was the key to being satisfied with their birth experience:

“If things had ended up the same with my son and ended up with a c-section, I think if I had felt more empowered in the process and not just felt like I had been dragged along and not felt like I didn’t have alternatives and not felt like they were treating me like I was being difficult when I didn’t agree with them, that I would have felt a lot more comfortable with what happened.” (049)

This woman’s response was provided at the end of the her interview, after being asked the closing question, “If you could wave a magic wand and change the health system, what would it look like for women who are giving birth after caesarean?”

Responses to the question were diverse but all involved strategies for helping women to choose a birth experience that is congruent with their personal values and preferences. These strategies included suggestions for improving health services, such as at-home support for socially isolated women in the first six weeks of postpartum recovery (001) and increasing the number of midwives in the health care system (007). Participants also desired more information about their options for mode of delivery. One woman wished to receive this

information from peers, such as through a support group where women share their birth stories (044). Others wanted more individualized information exchange with physicians, particularly about their personal health goals, “*where you could talk about what your priorities are*” (001). Women desired that information be provided “*ahead of time*” so that they could have the opportunity to process the new knowledge and prepare questions before clinic appointments (005). On their own, pamphlets and materials written for the general population were considered “impersonal” (025) and were not perceived to be useful for making a decision. Rather, each woman desired specific information on the attributes and outcomes of the birth experience that were most important to her. Participants accessed this information from midwives, peers, and the Internet, but many also wanted individualized information from a consultant obstetrician who was familiar with her obstetric history (029). Others emphasized that they wanted more information about the reasons for their primary caesarean and to have been asked by care providers about their mental wellbeing after an unplanned caesarean experience (049). To curb the potential for experiencing a sense of “failure” after a primary caesarean, participants suggested that women receive education about caesarean section in prenatal classes for primiparous women (024). Many also focused on the caesarean experience itself and suggested ways for making non-emergent caesarean more family-centred through immediate skin-to-skin in the OR, dim lights, a warmer room temperature, and uninterrupted contact between mother and newborn in the immediate hours of postpartum recovery.

4.3 Conclusion

This qualitative analysis of women's narratives revealed that the decision-making process for birth after caesarean is a complex and challenging experience characterized by seeking control over their birth in the midst of uncertain outcomes. Key findings include the insight that participants' decision-making process began during the inter-pregnancy interval when participants' contact with the health care system was limited. Notably, women's decision-making process was fairly rational. They first reflected on their caesarean experience and their perceived reasons for the caesarean, relying primarily on their experiential knowledge to make sense of their birth and form a preference for future deliveries. Participants buttressed this knowledge with information about options for mode of delivery from peers and the Internet, which was often not evidence-based and may have been due in part to the perceived inadequacy of clinical explanations. They then considered the attributes of birth that were most important to them and the trade offs they would have to make in order to have their desired next birth experience. For participants in this study who had had an unplanned primary caesarean, their values were influenced by the emotional impact of their labour and caesarean delivery. For many this experience was marked by a sense of trauma due to unanticipated events in labour that led to an unplanned caesarean, and due to being separated from their newborn during immediate postpartum surgical recovery.

My findings include a conceptual model that describes women's decision-making process when choosing mode of birth after a previous caesarean: *reflecting on their birth, clarifying their values, becoming informed, considering the feasibility of options, deliberating*

with the care team, and making an actual choice. Women's preferences were heavily influenced by their first caesarean experience, which for many was unplanned. Each woman considered different process attributes and outcomes in their decision-making, and these included a diverse array of clinical, psychological, social, and environmental factors. In order to achieve their primary goal of having a healthy baby, many women felt they had to make trade offs between their desire for a vaginal birth and their belief that an elective caesarean would be safest for their baby. In the next chapter, I describe the findings of my analysis of care provider and decision makers' narratives.

Chapter 5: Supporting Women to Make a Choice: Care Providers' and Decision Makers' Perspectives on Barriers to Access of Health Services for Birth after a Previous Caesarean

5.1 Description of the Sample

Care provider participants included midwives (n=4), obstetricians (n=4), family physicians (n=3), general practitioners with caesarean section skills (n=3), nurses (n=7) and one anaesthetist.

Decision makers included hospital administrators (n=5), regional decision makers (n=4), and provincial policy makers (n=4). Ten decision makers had a history of clinical perinatal practice, which allowed them to speak from their experiences as both a care provider and a decision maker. Participants in each region had closeknit, collegial relationships, particularly in the rural communities. In order to protect participant anonymity I have opted not to provide a table describing each participant's characteristics.

5.2 Results

Analysis of care provider and decision makers' narratives revealed that their attitudes and experiences were characterized by the core theme of "supporting women to make a choice."

Three additional themes illuminated the barriers and facilitators to care providers' perceived ability to support women to make a choice: being an "information provider," listening to the woman's voice, and "making it work" in the midst of limited access to services (see Table 5.1).

Care providers' narratives revealed the characteristics of clinical decision-making while decision

makers highlighted the influence of health service resources and policy on the context of that decision-making.

Table 5.1 Themes and Subthemes Emerging from Care Provider and Decision Maker Narratives

Core Theme	Theme	Subtheme
Supporting women to make a choice	Being an 'information provider'	<ul style="list-style-type: none"> • Timing the discussion • Giving a 'pitch' • Describing 'real world consequences'
	Listening to the woman's voice	<ul style="list-style-type: none"> • Recognizing that women 'experience failure' • 'Debriefing' a woman's birth experience • Creating a safe space for sharing
	'Making it work' in the midst of limited access to services	<ul style="list-style-type: none"> • Making safe choices • Coping with policy constraints • Working as a team

5.2.1 Supporting Women to Make a Choice

Care providers indicated that their role in the decision-making process was to “support” women and their families in making their own informed choices. However, these participants revealed that informed choice discussions were often persuasive. Care providers expressed that, on balance, planned VBAC is the optimal mode of delivery for healthy women with a previous caesarean. Citing their clinical practice guidelines,(13) they commonly counseled women to choose VBAC and assessed women’s willingness and motivation to attempt a vaginal birth: *“I rarely give women the choice of, ‘Do you want a VBAC or a c-section?’ I kind of say, ‘this is the way to go. Try a VBAC,’ and ‘where do you sit on the spectrum of tolerance [in labour]?”* (Midwife/Decision Maker, 055). Care providers recommended elective repeat caesarean when they believed that an individual woman had risk factors that would decrease her chance of a healthy planned VBAC, such as a potentially large baby (suspected macrosomia).

The intent of care providers’ persuasion appeared not to be to bias women’s decision-making or compromise autonomy. As one remarked, *“I rarely do push my opinion if I feel the decision has been made before coming to see me”* (Urban family physician, 016). Rather, care providers believed they were providing information that would help women make the healthiest choices possible at both an individual and population level, but based on the care providers’ own interpretation of the evidence and their personal values. There were no differences between midwives and physicians with regard to this theme, and all care provider participants described their role as that of information providers to support their patients’ autonomous decisions.

5.2.2 Being an “Information Provider”

5.2.2.1 Timing the Discussion

Analysis of interviews revealed that mode of delivery discussions between care providers and women occurred at multiple stages during the childbearing journey and with range of professionals. A woman could learn from her surgeon during a post-operative check-up if she was eligible for planned VBAC, or discuss options with a hospital nurse or her midwife in the first six weeks postpartum. In a woman’s subsequent pregnancy, she may visit a maternity care provider or a general practitioner (who does not practice maternity care) during the first 20 weeks, during which discussions about mode of delivery risks and benefits could surface. Participants perceived this to be a barrier to decision-making as generalist practitioners who are not actively involved in intrapartum care may not be up-to-date with the evidence on the safety of planned VBAC compared to those in active maternity care practice. However, primary maternity care providers felt there was enough time over the course of multiple antenatal visits to provide women with accurate information about mode of delivery.

Discussions about mode of delivery primarily occurred during the woman’s subsequent pregnancy and focused on the clinical and procedural risks and benefits that care providers felt were important to disclose for “informed consent.” Discussions rarely included a comprehensive discussion of health services and social risks that may be pertinent to decision-making. This discussion frequently included both the primary maternity care provider and a consultant obstetrician, however the purpose of the obstetric consult varied widely. In two

large sites, care providers generally only referred women with risk factors for a consult at 25-30 weeks gestation. In contrast, one urban site routinely referred all women for a routine “informed consent” consult. This was the only included study site that required signing of a consent form for either planned VBAC or elective repeat caesarean. In two small rural sites, all women had a “risk screening” obstetric consult in the first trimester to identify those who were eligible for local birth and those who needed a higher level of care. This approach was perceived to “tighten” standards of care and prevent unnecessary caesareans for otherwise healthy women. In all communities, midwives might send women who were uncertain about their choice for an obstetric consult, in the belief that obstetricians carried more authority and would increase women’s confidence in choosing planned VBAC. In each of these cases, risk/benefit discussions were a confirmatory exercise to ensure that the woman could give informed consent for mode of delivery, had confidence in their decision, and/or received the appropriate level of care for their risk profile. Notably, participants observed that women enter their pregnancy with a preference for mode of delivery and most solidify their choice before the third trimester.

These examples illustrate the variation in participants’ timing of the risk/benefit discussion and the function of conversations at different stages of the woman’s care pathway. One participant added that, to support true informed decision-making, women would benefit from iterative discussions beginning after the primary caesarean until her next birth:

“I think you need to start educating people now if they’ve just had their primary section for whatever reason. By the time you hit that second pregnancy, you often have made up your [mind]. I think women come in with a pretty strong sense of what they’d like to do [for birth after caesarean]. By then, over time, they’ve taken their [first birth] experience and what they’ve understood what happened and all those things have had time to sort of become ‘true’ as to the events. And maybe some clarification needs to happen about what happened [in their first birth].” (Urban family physician, 015)

However, a number of participants illustrated that some lack awareness of the challenges women may face in making informed choices for birth after caesarean. In the two small rural communities, where there were no midwives, physicians’ attitudes toward vaginal birth were overwhelmingly positive and they perceived planned VBAC to be the norm. As one participant expressed: *“Not to say it’s a non-issue, but I was a wee bit surprised of your [research] subject. It’s just a thing we don’t think about too much these days, about a VBAC”* (Rural family physician, 041). In other rural and urban communities, some participants felt the repeat caesarean section rate was appropriate for their patient population and that suggesting otherwise questioned their clinical judgment.

5.2.2.2 Giving a “Pitch”

Participants provided examples of a typical discussion they might have with a woman about options for mode of birth after caesarean. Most physicians opened the discussion by first asking women about their preference for mode of delivery, and then responded in their role as an information provider by giving a standard “pitch” on the medical and procedural risks and benefits of the woman’s preferred mode of delivery. For planned VBAC, this consisted primarily of giving women a verbal description of the absolute risk of uterine rupture (“1 in 200” [Participants 016, 051, 056]) and the likelihood of an average woman experiencing a vaginal delivery as planned (“70-80%” [Participants 004, 016]). Participants gave accurate statistics for these two risk estimates¹ and rarely cited inaccurate risk information. One participant inaccurately suggested that a woman’s “risk of section is coming up on 50 percent” if induced at 41 weeks gestation (Participant 011).

Apart from stating the two numeric risk estimates (absolute risk of uterine rupture, likelihood of vaginal delivery), care providers typically presented risks in narrative form. They rarely communicated the comparative risks associated with caesarean section. They also focused their discussion on the potential harms, rather than benefits, of mode of delivery. Some referred women to additional, local resources including the SOGC clinical practice

¹ In a large meta-analysis of the published literature on VBAC (1966-2009) the rate of uterine rupture for all women with a prior caesarean (regardless of route of delivery) was 0.3% (95% CI 0.2-0.4) and the risk was significantly increased with planned VBAC (0.47%) versus elective repeat caesarean (0.026%).(54)

guidelines, the Power to Push campaign website (www.powertopush.ca), or an Optimal Birth BC information brochure (www.optimalbirthbc.ca).

Participants spoke interchangeably about “informed consent” and “informed choice.” In the model of midwifery care, “informed choice” is a principle enshrined in their scope of practice that refers to women’s right to be the primary decision-maker, while the midwife is responsible for facilitating “the ongoing exchange of current knowledge in a non-authoritarian and co-operative manner.”(174) Most participants described supporting such an “informed choice” model, where the care provider communicates information to the woman on her options and the woman makes an autonomous decision after deliberation. No participant used the terms “shared decision” or “shared decision-making” in their interview, but most described engaging in some components of a shared decision-making process, in which the care provider shared information on options, the woman shared information on her preferences, and after mutual deliberation the woman and primary care provider both participated in making a mode of delivery decision.(175) Other individuals may be involved in the shared decision, participants emphasized, including a partner and/or consultant obstetrician. These narratives highlighted that while birth after caesarean was a preference sensitive decision that rested with the woman, care providers may move fluidly from an informed choice to a shared decision-making dialogue. The model they adopted depended on their perception of the woman’s information needs, her likelihood of having a successful vaginal birth, and whether it was time to engage in deliberation.

5.2.2.3 Describing “Real World Consequences”

Despite describing numerous opportunities for information exchange with women, urban participants felt that women were not receiving information on health services risks (legal and operational) of planned VBAC, which many described as the “real world consequences” of not having access to the operating room for an immediate caesarean if needed. Care providers in the small rural communities expressed that they routinely communicated the risks of limited local resources to all women, regardless of caesarean history. Some urban participants had been exposed to two recent events in the region: a series of malpractice lawsuits related to decision-making for caesarean, and a panel presentation on informed consent at a medical conference. These participants emphasized their legal responsibilities in decision-making for birth after caesarean and perceived that they must disclose the potential harms and consequences of planned VBAC and the resources available. As one expressed:

“All the obstetricians in [the region] need to be very, very clear about the fact that if there is an urgent, emergent need to rescue mom and/or baby during a labour and delivery, and especially related to VBAC, the obstetrician is obligated to share [the risks] with their patient. So, I think that up until now, that has not been part of the discussion. So I think there is a new awareness among our obstetricians particularly related to the need for really clear language around what resources are available at each site.” (Regional decision maker, 017)

Although care providers were aware of the fear this might cause women, they felt legally responsible for disclosing the consequences of delayed access to caesarean, including potential harm to the baby. Notably, the few participants who had experienced a mother or baby's death or injury from VBAC, all obstetricians with experience in high-volume practice settings, did not feel that it had affected their willingness to attend such births, because they believed such outcomes were rare. Instead, they expressed that they adjusted their practice and adopted an air of heightened awareness around VBAC labours, monitoring closely for signs of uterine rupture. These participants did not suggest that they were more likely to offer repeat caesarean as a result of these past experiences, however many other participants noted examples of their colleagues (non-participants) who had become more risk-averse after experiencing a poor outcome from a uterine rupture. One participant remarked on the practice of nurses in one community who had witnessed an adverse outcome from a planned VBAC: *"I have a couple of nurses that are really hesitant and feel really anxious about VBACs and they will not leave the room unless they have coverage of someone else going in there. It's not necessarily a bad thing but I think some of the patients feel like they are being hovered over."* (Rural hospital decision maker, 042)

5.2.3 Listening to the Woman's Voice

5.2.3.1 Recognizing that Women Experience "Failure"

Participants also revealed how care providers made efforts to listen to the woman's voice in decision-making. This theme was underpinned by participants' belief that the decision for birth

after caesarean is an emotional choice that is shaped by women's experience of their first caesarean and the stories they hear from the Internet and peers. Female participants in particular spoke passionately about the lifelong impact of a woman's birth on her identity as a mother, and some described their own experience of giving birth by caesarean or planned VBAC. These participants revealed that in decision-making for mode of delivery a healthy baby is the most important factor, but it is not the only thing that matters.

Participants observed that women with an unplanned caesarean commonly experience a sense of "failure" and "fear of labour." The first birth experience directly impacted women's reproductive choices, as one commented:

"If you looked at it from the woman's perspective, she might say, 'Oh, I can't go through another long labour like I did last time and end up a C-section.' I think certainly there's that psychological impact too, like, 'Oh, I'm going to fail again.'"

(Hospital decision maker, 012)

In the urban region, care providers also spoke with empathy and frustration about routine practices for separating the mother and newborn for the first one to two hours in post-caesarean recovery, which they felt compounded the trauma of an unplanned caesarean.

Paradoxically, although all participants believed that the first birth had a profound effect on women's choices for the next delivery, few physicians asked women about their first birth experience. Instead, as described above, their discussions about mode of delivery after

caesarean focused on clinical and procedural risks and benefits. Further, only the midwifery participants and one community-based nurse spoke about treating fear of birth through strategies other than prophylactic repeat caesarean. These included higher levels of labour pain medication, counselling from a mental health professional or social worker, seeking midwifery care, or building a trusting relationship with a single maternity care provider rather than a larger on-call group.

5.2.3.2 “Debriefing” a Woman’s Birth Experience

Midwives often began their first antenatal visit, typically one hour in length, with a “debriefing” conversation about the woman’s first birth experience. They felt that many women sought midwifery care after caesarean to maximize their chances of having a planned VBAC. By beginning their dialogue with women’s experience, midwives felt better able to tailor a comprehensive risk/benefit discussion to the things that were central to their decision, such as how postpartum recovery from a caesarean would restrict a woman’s ability to carry her older child, or how labour might trigger post-traumatic stress or anxiety. Consultant obstetricians in the small rural communities held a similar conversation in their first trimester “risk screening” appointment with women, which could also last one hour and often included discussion of social risks (emotional, cultural, financial) of mode of delivery.

5.2.3.3 Creating a Safe Space for Sharing

Participants who had practiced as a public health nurse or midwife in a community setting

observed that women would share different information depending on their environment. One decision maker reflected that in her previous role as a public health nurse she would make repeated home visits to new mothers. Being in their own homes allowed women to share highly personal and emotional stories of failure and redemption related to birth and breastfeeding (Rural nurse / Hospital decision maker, 038). Midwives similarly observed that women are not as willing to open up and share personal stories in a medical environment, such as a hospital room, or over the phone. This highlights how physical environment influences the content of discussions about mode of delivery and may constrain women's ability to integrate her first birth experience into the informed choice process.

5.2.4 “Making it Work” in the Midst of Limited Access to Services

Care providers and decision makers in the three large communities had strong patient safety and medico-legal concerns about being able to access an operating room (OR) in a timely fashion if a uterine rupture was suspected. These concerns were due to a lack of dedicated obstetric ORs, competing access with other surgical specialties to existing ORs, and lack of in-house, 24/7 anaesthesia. A dedicated maternity OR and 24/7 in-house anaesthesia are not health system requirements for planned VBAC in Canada (13) and at the time of the study all five study communities offered planned VBAC. However participants in the three large communities emphasized that existing obstetrical surgical services did not match population need, creating unsafe conditions for access to non-elective caesareans. In all settings, participants described “making it work” with limited resources. One strategy in the large sites

was to page the anesthetist away from another patient whose surgery was in progress. The anaesthetist would stabilize the patient, leave them under the observation of a nurse, and attend the caesarean in another OR.

Urban regional managers expressed that women's health tends to be a low priority in health service priority setting, particularly in this era of fiscal restraint, and were pessimistic about receiving funding to support an appropriate level of surgical services for their patient population. Care providers and decision makers in these larger sites described how other surgical specialists act as gatekeepers to the operating room and control its access:

"The people that have the decision-making power over the operating room are not the obstetric group, so it is the surgical program. I'll just be very honest. When you get very powerful surgeons, such as an orthopaedic surgeon or a physician that's doing cataract surgeries and that sort of thing, and they really own it. I don't see them as really giving up any of that time or space." (Hospital decision maker, 012)

These issues of competing access influenced clinical decision-making. Care providers felt more comfortable with managing planned VBAC deliveries on days with easier access to the operating room (e.g. when fewer elective surgeries were scheduled). In contrast, when access to the operating room was limited, they felt that planned VBAC incurred greater risks. As described above, care providers communicated these risks to their maternity patients:

“We just usually say that we have only one operating room after 3, 4 p.m. There's one anaesthetist. If there's one acute surgical case, the OR could be occupied and access could be limited for a certain number of hours. I think that also goes into a more elective section decisions rather than VBACs. I know that, of course, the surgeons who sign the consent, especially those who sign for VBAC, spend more time talking about possible operating room access and anaesthetist availability and so on.” (Urban family physician, 016)

Patient safety concerns about limited surgical resources did not emerge from analysis of interviews from participants in the two small rural sites. They expressed confidence in their current access to surgical services, experience in working with limited resources, and no professional competition with other surgical specialties for access to the operating room. All three rural sites described “making it work” by communicating with the anaesthetist and OR team when a woman began labour with a planned VBAC, particularly if they were off-site. This suggests that small rural communities were better equipped to provide the option of planned VBAC than their urban counterparts due to a combination of care provider characteristics, risk screening protocols, and interprofessional communication.

The College of Midwives of British Columbia supports planned home birth after caesarean (HBAC) (176) however attitudes toward this service varied by midwife. The two rural midwives supported women’s informed choice of HBAC and felt supported by local obstetricians in providing that service. One urban midwife chose not to offer HBAC due to personal beliefs that

it is safest to plan VBAC in hospital, while the second expressed that offering HBAC could threaten her practice's positive relationships with obstetricians, who provide their hospital admitting privileges: *"We both prefer hospital VBACs, just because we don't know what the obstetricians are going to say to us and we want to keep our privileges, right?"* (Urban midwife, 004). Midwives' narratives indicate that interprofessional relationships with obstetricians and fear of losing one's hospital privileges, along with concerns about patient safety, may limit women's access to options for place of birth.

5.3 Conclusion

Results of this qualitative analysis indicate that care providers and decision makers believe women have the right to make autonomous, informed choices between options for mode of delivery after caesarean. Interviews revealed that health system characteristics may influence women's decision-making, including access to surgical and anaesthesia health services; care providers' attitudes toward the risks of planned VBAC; the quality and type of risk information shared in informed choice discussions; and the timing of those discussions in the care pathway. Disclosing clinical risk is important and necessary from an informed consent perspective, but may not help women consider the comprehensive health services and social risks pertinent to their choices for mode of delivery. In the next chapter, I synthesize the findings of my analysis of women's, care providers', and decision makers' narratives.

Chapter 6: Patient, Care Provider, and Decision Makers' Perceptions of Barriers to Implementation of Shared Decision-Making for Birth after Caesarean: A Complex Adaptive Systems Perspective

6.1 Introduction

The objective of this chapter is to explore the factors that influence the implementation of SDM in routine practice for birth after caesarean, where *implementation* refers to “the process of putting to use or integrating evidence-based interventions within a setting.”(4) I explore participant narratives – patients, care providers, and decision makers – through the lens of complex adaptive systems (CAS), an explanatory theory that helps to understand health service implementation processes and challenges at a behavioural and organizational level.(1,60,177) A CAS is a collection of individuals “with freedom to act in ways that are not always totally predictable, and whose actions are interconnected so that one agent's actions changes the context for other agents.”(1) CAS is a fitting framework for understanding how contextual factors and relationships at micro, meso, and macro levels of the healthcare system influence decision-making for mode of delivery decision-making and implementation of SDM.

CAS has been previously used as the theoretical foundation of research investigating implementation of interventions for Type II diabetes,(178,179) congestive heart failure,(180) physical rehabilitation,(181) and elder care services.(182) Nieuwenhuijze and colleagues (183) recently developed a comprehensive taxonomy of key complexity theory characteristics, which may be used a framework for understanding system behaviour in maternity care. These studies

speak to the interest of researchers and decision makers to use CAS theory in implementation for health services broadly, and maternity care in particular. However researchers and health service decision makers struggle to translate the dense concepts of complexity and complex adaptive theory for real-world health systems and practice.(183)

This chapter builds on the results of my grounded theory analysis of participants' attitudes toward and experiences with decision-making for birth after caesarean. In Chapters 4 and 5 I explored the micro, meso, and macro levels of decision-making for birth after caesarean. I explored participants' attitudes toward and experiences with the component parts of SDM: exchanging information about the decision, listening to women's preferences, including those preferences in the decision, and the role of the woman and care provider(s) in decision-making for birth after caesarean. Thus, my interviews explored participants' perceptions of SDM implementation barriers and enablers, as well as the broader context in which birth after caesarean decision-making takes place. The findings from my grounded theory analysis identified two overarching themes and relevant subthemes:

1. *Women seek control in the midst of uncertainty* and form an early preference for their next birth.
2. Care providers and decision makers see their role as information providers and *support women to make the choice* for birth after caesarean. In supporting SDM for birth after caesarean, decision makers and care providers "*make it work*" in the midst of limited access to services.

These themes provided insights into the various factors that may influence women’s decision-making for birth after caesarean.

In this chapter, I build on these findings using the lens of CAS theory to consider, how does a complex adaptive system perspective of decision-making for birth after caesarean help to understand and explain implementation of SDM? I explore the system characteristics and processes that influence implementation of SDM for birth after caesarean in the context of this study, including the relationships between barriers and enablers, and how these differ between different clinical settings, health professional groups, and geographic areas. This chapter informs Chapter 7 on integrated knowledge translation, where I consider how locally-derived knowledge on decision-making for birth after caesarean may be used to support care providers and policy makers in implementing SDM for birth after caesarean.

6.2 Background

In Elwyn’s book exploring case studies of implementation of SDM, he suggests that the challenge of implementing SDM between patients and clinicians may be a symptom of broader systems influences:

“Might it be that we should investigate why professionals behave the way they do? What drives so many to spend so little time explaining treatments to patients? Why so little curiosity about individual preferences? Professionals do

not go to work to do a bad job, so what is it about the surrounding systems that make it so difficult to become patient-centred?”(148)

However, the ‘surrounding systems’ involved in implementation of SDM have received little attention in the literature to date. Rather, two highly cited reviews have revealed that the literature has focused primarily on discrete barriers and facilitators to implementation from the perspectives of the two actors involved in SDM encounters – patients and health care professionals.

Légaré et al conducted a systematic review of 38 studies on health professionals’ perceptions of barriers and facilitators to SDM.(147) Their findings were organized into a taxonomy of barriers and facilitators. The most cited barriers to health professionals’ uptake of SDM were time constraints such as short clinic visits, and lack of appropriateness of SDM for their patient population or clinical situation, respectively.(147) These findings illustrate that more attention needs to be paid to *how* stakeholders feel about SDM interventions before developing or implementing them in routine practice. Similar findings were observed in Légaré et al’s validation of the Interprofessional Shared Decision-Making framework (IP-SDM), a conceptual model for SDM in primary care developed in Canada.(184) In addition to the above barriers, an imbalance of power among health professionals, practicing in silos, disagreement about roles and responsibilities, and costs of implementation (an organization barrier) were cited frequently. Reported facilitators pointed to the need for interprofessional collaboration and organizational support to integrate IP-SDM into existing practice.(184)

Joseph-Williams et al observed in their systematic review of 44 studies on patient-reported barriers and facilitators to SDM that the “patient” role and power imbalances in the “doctor-patient” relationship lead to lack of patient involvement in decision-making.(185) They organized their findings in a taxonomy of individual-level barriers and facilitators, but highlighted that patient (micro) level factors are intertwined with barriers at the levels of the organization (meso) and health policy and culture (macro).

These different facets of the health care system and the relationships between them need to be explored in order to create knowledge that responds to differences in, as Bowen and Graham describe, “culture of decision making, type of decisions, importance of contexts, timelines for decisions, and types of evidence considered credible.”(40) The systematic reviews prepared by Légaré and Joseph-Williams provide important insights into the potential challenges that health care providers and patients may encounter when attempting to engage in SDM, based on findings primarily from qualitative studies. However, it is unclear whether these frameworks consider the range and context of implementation of SDM for birth after caesarean since few studies on the subject have concerned maternity care and none included stakeholders other than health care professionals and patients. Implementation researcher Per Nilsen posits in a systematic review of knowledge translation theories that a complexity perspective may be necessary to understand the relationships between discrete barriers and facilitators: “there could be synergistic effects such that two seemingly minor barriers constitute an important obstacle to successful outcomes if they interact.”(7)

6.2 The Conceptual Lens

Charmaz cautions that “the constant comparative method in grounded theory does not end with completion of your data analysis.”(84) In a grounded theory study a conceptual model or theoretical framework “emerges from your analysis and argument about it” and serves to “inform a specific argument in a particular piece of work.”(84) Focusing on a single argument, the conceptual model helps to explicate your logic and directions, explains the significance of your original concepts, and should fit the disciplinary audience for which you write. In studies of implementation, conceptual models should be used with caution as “theory may serve as blinders,”(7) restricting the problem to an existing framework with predetermined barriers and facilitators, preventing researchers from seeing problems with a fresh perspective.(186)

Previous investigations have used various theories to understand how individual and organizational behaviours may facilitate implementation of SDM. Desroches et al. surveyed dieticians’ beliefs about SDM using the Theory of Planned Behaviour,(187) a theory that posits that a set of beliefs determine an individual’s intention to engage in a given behavior, and links the individual’s intentions and context to the actual behavior they undertake.(188) Frosch et al suggested use of the Integrative Model of Behaviour in developing and evaluating patient decision aids,(189) which theorizes that an individual’s intention to take up a behaviour depends on their attitudes toward how favourable the behaviour may be, perceived norms (e.g. social pressure), and self-efficacy.(190) A multidisciplinary team in the UK evaluated a complex SDM intervention for patients, care teams, and decision makers using Normalization Process Theory, which seeks to explain how interventions and behaviours are routinized in everyday

practice.(172) This last study illuminated the importance of care providers having a coherent view of their role and purpose, engaging in developing and delivering SDM interventions, and feeling that the intervention matches existing skill sets and organizational priorities.(191) However, behaviour change theories and taxonomies that deconstruct the health care system into pre-defined theoretical or empirical categories may limit the scope of a problem to the behaviour of individuals and overlook the role of environment, organizational context, and relationships between different stakeholders.(7)

In health services and implementation research, dominant theoretical frameworks are built on the premise that systems may be improved by external forces and that organizational barriers may be solved through more collection of data, the application of rigorous and sophisticated analyses, and rational solutions.(192) This presumes that big, complex problems (such as how to implement SDM or how to support women's choices for birth after caesarean) can be rendered into smaller, simple ones. Deconstructing approaches may work with 'complicated' systems such as cars or computers, which consist of a vast number of components, but each part can be broken down and described individually. However deconstructing systems that are 'complex,' such as the brain, immune system, or a healthcare team, prove frustrating, as the interaction between the system and its environment is such that the system as a whole cannot be understood simply by analyzing its component parts.(193)

The paradigm of complex adaptive systems (CAS) retains complexity by shifting the focus of analysis from "foreground" to "background" (194) – from individual SDM elements to their context, the interaction between those elements, and how they self-organize.(192) It

“challenges the positivistic framework that dominates health service research—a confident assumption that there is one correct organizational solution towards which research will inevitably converge.”(192) In decision-making, complexity science can help explain how an array of factors influence individuals to make unexpected, seemingly irrational, and potentially dangerous health choices.(195) Complex systems exhibit a number of common characteristics that can be used to understand decision-making behaviour and the factors that influence implementation of SDM (see Table 6.1).

Table 6.1 Characteristics of Complex Adaptive Systems

Attractors*	Attractor patterns provide a simple understanding of what seems to be complex behavior. They are ordered states in the midst of chaos.
Simple rules	Agents respond to their environment by acting on internalized rules, such as instinct or heuristics. These rules may look illogical to another agent.
Interconnectivity	The complex system consists of agents that interact in dynamic ways. The system is more than the sum of its parts. Interconnectivity is apparent when the system self-organizes in creative ways in response to change.
Co-evolution	Each agent and system is nested in other systems, all co-evolving together and interacting.
Self-organization	The complex system inherently self-organizes through simple, locally applied rules of behavior. Innovation can emerge from within; it does not need to be imposed.
Emergence	The complex system emerges/develops over time, adapting in response to internal and external factors.
Non-linearity	The behaviour of the complex system is inherently non-linear. Seemingly small triggers can lead to huge outcomes.
Unpredictability	The behaviour of the complex system is inherently unpredictable because its elements change over time and it is sensitive to small triggers.
Feedback loops	Positive and negative interactions feedback to people in the system. The system is connected from past to future.
Initial conditions	The history of the system is its initial conditions. It is an attractor that influences how the system behaves, evolves, and responds to change.
Open boundaries	The boundaries of the system are not well defined. Membership in the system can change and agents can be part of multiple systems at once.

*List of characteristics adapted from Nieuwenhuijze et al (183)

6.3 Discussion

In the following section I discuss my qualitative findings through the lens of complex adaptive systems theory. I begin with “case examples” of implementation of SDM for birth after caesarean, drawing from two participant narratives. The case examples illustrate factors that influence implementation of SDM for birth after caesarean from the perspective of a) a rural woman under family physician care whose first caesarean was due to perceived failure to progress (Participant 030) and b) an urban family maternity care practice, which draws on composite interviews (Participants 013, 016, 020). These are examples are not meant to be representative of all women’s and physicians’ experiences. Rather they were selected for illustrating the multidimensional array of system factors that may influence a stakeholder’s decision-making for birth after caesarean. After providing these case examples, I then organize my discussion around characteristics of a complex adaptive system.

CASE EXAMPLE 1: “Hannah,” Participant 030

Hannah was 36 when she became pregnant with her first child. She describes that her labour resulted in an unplanned caesarean for “failure to progress,” yet she had always had a feeling that she would end up with a caesarean. She felt disappointed at the loss of her planned natural birth and felt that she must not be “strong enough” to have a vaginal delivery. One month after her birth, her family physician told her she could plan a VBAC in future but recommended that she plan an elective repeat caesarean. If Hannah has more children, she thinks she will feel “more in control” if she plans an elective caesarean. At the same time, she strongly desires to have a vaginal delivery to experience immediate, uninterrupted bonding: *“You’re supposed to be able to have your baby go through the birth canal and pick her up and hold her on your own chest.”* Hannah cries as she considers the difficult trade offs between her options for mode of delivery.

In her first year of motherhood Hannah goes over her first birth and speaks frequently with a close friend who also had an unplanned caesarean. These conversations give her comfort and make her feel less alone. She has a lot of difficulty breastfeeding, which she attributes to her caesarean. She and her husband have no immediate family in town to assist with childcare. This crystallizes her preference for repeat caesarean so that her family can plan their visit around her birth date. She feels sadness about this choice because it closes the door on her chance to have a vaginal birth.

One attractor pattern in Hannah’s behavior may involve social relationships. Her toddler’s need for childcare and her parents’ need to plan their travel lead to her preference for repeat caesarean. These considerations emerge before any future pregnancies, and are based on her personal experiences. Other attractor patterns may be Hannah’s desire for control after having an unplanned caesarean, and for immediate bonding with her newborn after delivery. Her

attitudes toward birth are influenced by her physician's recommendation for repeat caesarean and social norms about how women are "supposed" to give birth.

Hannah struggles to make a choice that matches her values and her family's needs. Due to the early timing of her preference for elective repeat caesarean and recommendation from her physician, future SDM activities may have little influence on her choice.

CASE EXAMPLE 2: "Urban family practice," Participant 016

Family physicians in an urban maternity care practice believe that women should be supported to make their own informed choices for birth after caesarean, as both planned VBAC and repeat caesarean are safe options. In comparison to similar-sized hospitals, the family practice's local hospital has high rates of repeat caesarean for healthy low-risk patients. The physicians feel this is due to patient request. When women have their first visit in their pregnancy after caesarean, they typically express a preference for elective caesarean because it is "convenient" and would prevent them from repeating the "trauma" of a labour that leads to an unplanned caesarean. The physicians also feel these choices are influenced by birth stories circulated on the Internet.

The physicians all practice informed choice decision-making where the woman makes a final decision: *"I try to go with what woman wants, and give her information and refer her to an OB."* It is the practice group's policy to refer all patients with a previous caesarean to an obstetrician at 25-30 weeks for an informed choice discussion. In this consult the woman makes a final decision after hearing again the medical risks and benefits and signing a consent form for mode of delivery.

Both the family physicians and the obstetrician explain to patients if there is an emergency during a VBAC labour there might be a delay in getting access to a caesarean and the potential

consequences for mother and baby would be catastrophic. Although nearby hospitals may have more surgical resources to support planned VBAC, the family physicians do not like to send their patients away.

The attractor patterns in the family practice group's behavior may be the desire to support women's informed choice and mitigate patient safety concerns related to limited local access to caesarean. These interviews reveal that their safety concerns stem from local nursing and anesthesia staff shortages and competing access with other specialties to the operating room. Interviews with other participants, including health service decision makers, further uncover that these access challenges began upstream with a limited budget and strategic policy priorities that did not include maternity care. Also, recent malpractice suits related to decision-making for caesarean have been covered in the local media. This has caused physicians throughout the urban region to discuss the risks of limited access to surgery during informed consent for birth after caesarean.

Through these two case examples, I aim to widen the focus from the "foreground" of patient, provider, and decision maker experiences to the "background" of the phenomenon and provide insights into relationships between actors in the decision-making context and the blurry boundaries between the clinical (micro) level, organization (meso) level, and policy (macro) levels of the healthcare system. The overall pattern that emerges provides a simple understanding of what seems to be complex behaviour.(1) What may appear to be resistance to change or irrational decision-making may actually be behavior that follows a natural "attractor" pattern in the broader system.(60,193) These patterns explain why some women who value and prefer vaginal delivery choose to plan elective repeat caesarean or why decision

makers committed to supporting women's access to planned VBAC may simultaneously feel that it is an unsafe option.

6.3.1 Attractor Patterns

Although the complex system is unpredictable, there is often an overall pattern and it is possible to anticipate the consequences of certain responses.(177) Attractor patterns are ordered states in the midst of chaos and provide a simple understanding of what seems to be complex behavior.(1) Positive and negative feedback intrinsic to the system leads to patterns of behaviour, such as a routine informed consent process for birth after caesarean or relying on friends and the Internet for birth-related information.(196) Thus although the system is flexible and dynamic, the individuals within it act within a slightly defined range of behaviour.(183)

The attractor patterns in these two case examples suggest that seemingly irrational decisions made by patients and care providers can be explained by simple motivated behaviour influenced by their context and relationships. Why did Hannah choose an elective repeat caesarean that she personally did not want? Why did the family practice group provide biased risk information to their patients? Each was responding to the elements of their surrounding system and the intricate relationships between those elements.

Looking at these attractor patterns and the behaviour they induce reveals that the care provider in case example 2 was not resistant to supporting women's choice of birth after caesarean; rather in their attempt to support women to make choices based on full information they counseled women about real world patient safety and litigation concerns. To return to the

core themes from analysis of care provider and decision makers' narratives, they were "*making it work*" in the context of limited resources. In case example 1, Hannah's social system and family responsibilities drove her decision-making, and through her choice she *sought control in the midst of uncertainty*.

Hannah's story illustrates the role of social relationships as an attractor in her decision-making for birth after caesarean. She began her preference formation soon after her first caesarean, outside of the healthcare system as she was no longer a patient. Within her social sphere she came in contact with individuals whose information and experiences were relevant to the attributes of mode of delivery that were most important to her individual decision – regaining control of her agency, experiencing a vaginal delivery, and having local family support.

6.3.2 Simple Rules

The attributes of importance to Hannah can also be viewed as "simple rules" in the system at the patient level: "internalised principles or values that drive a common direction of travel among the people in a complex system." (183) Conversely, the simple rules that motivated the behaviour of the family practice group in case example 2 were related to "making it work" in the midst of limited resources, which was a core theme that emerged from my grounded theory analysis of care provider and policy maker narratives. The simple rules that guided the family practice group's behaviour reflected their values of supporting women to make a choice, promoting patient safety, and avoiding litigation.

In a complex adaptive system, seemingly irrational behaviour can be further explained by drawing on complementary theory on cognitive heuristics, simple rules for how individuals make decisions when faced with competing options.(1) A common heuristic, loss aversion, helps to further explain the attractor patterns in decision-making for birth after caesarean. Loss aversion explains how individuals prefer avoiding losses to acquiring comparable gains.(197). For the family physician case example, when they considered the outcomes of a planned VBAC, the risk of morbidity and mortality resulting from a rare uterine rupture loomed larger than the likelihood of having a healthy vaginal delivery. For Hannah, the risk of experiencing a traumatic repeat caesarean during a planned VBAC loomed larger than the likelihood that she would have a successful VBAC as planned. This heuristic led Hannah and the family practice group to avoid these rare potential losses by opting for the mode of delivery they perceived to be safest and most predictable based on the outcomes of childbirth they most valued – feeling in control and a healthy mother and baby, respectively.

6.3.3 Interconnectivity and Co-Evolution

These patterns also illustrate that, when making a choice for birth after caesarean, there are multiple interconnected systems that influence the decision-making process between a care provider and patient. Patients and care providers are nested in other systems, all of which co-evolve together and interact. A patient like Hannah may respond to the social influence of her parents, children, friends, and strangers on the Internet. Care providers such as those in the family practice group adjust their behaviour to cope with internal demands coming from within

the healthcare system from nurses, anaesthetists, other surgical specialists, and physician peers. Their behaviour also responds to dynamic interaction with the external public sphere created by lawyers, government policy makers, and the media. Interconnectivity appears when a system or group self-organizes or adopts creative changes, such as a physician practice having increased repeat caesarean rates. This self-organizing activity is the group's response to dynamic interaction with different agents. It is not planned and, "if asked, no one in the group can explain exactly how they came about."(183)

6.3.4 Self-Organization and Emergence

Such interaction of individuals at a micro level occurs without internal or external direction, rather it emerges spontaneously and allows the system to adapt and self-organize in response to barriers and challenges. Self-organization is a "process in which people mutually adjust their behaviour to cope with changing internal and external demands."(183) This leads to emergence, which is a pattern of behaviour that analysis of the component parts of the system could not have predicted.(192)

Hannah's diachronic decision-making process illustrates emergent behaviour at a micro level. She strongly desires to have a vaginal birth, yet her conflicting desire to have control over her labour and delivery leads her to prefer a planned repeat caesarean. External influences from family do not compel her to make this decision, but her values and the interconnectivity of her social and healthcare contexts reinforce her choice for a caesarean. Within case example 2, the family practice group illustrates emergence and self-organization at a meso level in their

clinical counseling and subsequent high rates of repeat caesarean. Negative feedback from other overlapping systems (e.g. policy makers, the media, the legal system, other clinical specialties) causes them to adapt their behaviour not from a top-down approach or “hierarchical demands,”(183) but rather in response to patient safety concerns about access to the operating room. Looking at the component parts of the system does not reveal this pattern of behaviour. It is visible only by looking at the relationships between those components.

Although not discussed in these case examples, it is helpful to consider how negative feedback can lead to emergent behaviour that promotes patient-centred care. In this study, small rural communities expressed innovative variation. Physicians in two small rural communities met the challenge of limited access to resources by creating practice groups involving all primary maternity care providers in each community. They also increased the communication between physicians and on-call surgical staff when a woman was in labour with a planned VBAC (see Chapter 5). Pooling resources and increasing interprofessional communication were innovations that appeared to flourish in these isolated rural communities. The system self organized in response to interaction of diverse local agents, not from external design. However, in the case of the rural communities, the emergent behaviour led to health service conditions that supported women’s informed choice of both modes of delivery.

6.3.5 Non-linearity and Unpredictability

In a complex adaptive system, “interactions usually have a fairly short range, i.e. information is received primarily from immediate neighbours. Long-range interaction is not impossible, but

practical constraints usually force this consideration ... As a result, the influence gets modulated along the way. It can be enhanced, suppressed or altered in a number of ways.”(193) Further adding to the complexity, these interactions are non-linear, unpredictable, and small causes can have very large effects.(1) Effects are non-linear and interact with other elements in the environment.

The example of the family practice group’s behaviour succinctly illustrates this interconnectivity and the dynamic effect of short-range interactions. Recent malpractice suits related to decision-making for caesarean occurred in the local area. These events were reported in the media, which drew the public’s attention and required a response from health service decision makers who were aware of local nursing and anaesthesia shortages and competing access with other specialties to the operating room. These staff shortages were the result of budget constraint at a systems level, which in turn resulted from allocating resources to areas other than maternity care. These events were fed back to individual care providers who spontaneously adjusted their behaviour for decision-making for birth after caesarean in response to changing internal and external demands. This interconnectivity represents a feedback loop, “in which the positive and/or negative effects of a particular action or change are fed back to the people in the network. This feedback affects the way these people behave in the future, also in the connection with one another.”(183) There is also a temporal component to feedback loops, as explained below.

6.3.6 Feedback Loops and Initial Conditions

“Complex systems have a history,” Cilliers writes, “Not only do they evolve through time, but their past is co-responsible for their present behaviour. Any analysis of a complex system that ignores the dimension of time is incomplete, or at most a synchronic snapshot of a diachronic process.”(193) The element of time in the process of decision-making is often underrepresented. The decision-making process is typically conceptualized as one that begins when a health professional introduces the decision to be made and ends with the choice being implemented.(50,175,184)

In decision-making for mode of birth after caesarean, women’s decision-making may not begin with a care provider introducing the decision. As in Hannah’s case, a woman likely has knowledge that there are two options – planned VBAC or elective repeat caesarean – and her decision evolves over time. This is illustrated in the conceptual map of women’s decision-making for birth after caesarean presented in Chapter 4 (Figure 4.1). Women who have an unplanned caesarean go over and over the trauma of the first birth in a cyclical fashion. In women’s reproductive decision-making from pregnancy to pregnancy, the decision for the first mode of delivery influences the decision for the next birth and the next and so on. Following the case example of Hannah, going over the trauma of the first birth was part of her process of seeking control in the midst of uncertainty and, ultimately, forming a preference for mode of delivery.

Moving up from the individual level to look at feedback loops on a larger system scale, trends in policy for birth after caesarean may be explained by this concept. In the mid-1990s

with the publication of a landmark study of 6,138 Nova Scotia women with a previous caesarean, which suggested that the rate of uterine rupture and consequent morbidity associated with VBAC was higher than previously thought,(114) planned VBAC became less common in the medical profession.(54) However in response to rising repeat caesarean rates and evidence that it was escalating to unsafe levels,(59) there was another change in practice patterns and care providers began to increasingly promote planned VBAC as a safe option. In one community involved in this study, a care provider participant described this ebb and flow of attitudes toward planned VBAC as a “swinging pendulum,” another metaphor for the feedback loop construct. The history of decreasing rates of planned VBAC may be seen as the initial conditions for the complex system. History and research evidence function as attractor patterns influencing whether the system will change or not. Thus each swing of the pendulum back to a trend of elective repeat caesarean is new but not unfamiliar.

6.3.7 Open Boundaries

The boundaries of the complex system are difficult to determine and often depend on the perspective of the viewer rather than some intrinsic property of the system.(192) Thus when I invoke the term “healthcare system,” I refer to a collection of people, identities, actions, and ideas that are part of several systems at the same time. The social and professional interactions in the case examples illustrate how information and interactions cross over from different environments, such as a patient’s social network, policy directives from the Ministry, or lawsuits in a courthouse. At a meso level of the system, in order to access the OR in the event of a STAT

or emergent caesarean, obstetricians must negotiate with surgeons in other clinical specialties who may be using the space, the anaesthetist who is paged at home during the middle of the night, and an increasingly understaffed rotation of on-call surgical nurses. At a micro level, the individuals in the case examples are part of multiple systems at the same time that are formal (e.g. a maternity practice group) and informal (e.g. an online social community). In the context of these overlapping systems of influence, the boundaries of the healthcare system, and the walls of the antenatal clinic room, become fuzzy.

6.4 Conclusion

In this chapter I have explored how a complex adaptive system (CAS) perspective of decision-making for birth after caesarean helps to explain the context that may influence implementation of SDM for birth after caesarean. Applying complexity theory illustrates that the evidence-to-action gap cannot be understood by decomposing the problem into individual barriers, facilitators, and outcomes. Yet barriers and facilitators to implementation are often assessed individually.

The phenomenon of decision-making after a previous caesarean emphasizes the importance of understanding how patterns evolve within systems, how these systems self-organize, and the interaction between system elements. Current perspectives in the shared decision-making literature embrace this perspective that individual micro-level decisions take place in a broader context that includes the meso/macro influence of environment, social

norms, organizational routines, and social structures.(184) However the role of relationships between these contextual factors has not been previously reported.

In this chapter, I have expanded my focus from the foreground of patients' and health care professionals' perceived barriers and facilitators to implementation of SDM, to the background interactions and attractors that influence the SDM context for birth after caesarean. Participants' experiences emphasize the need for shared understanding of the oft invisible factors and actors that influence choices for mode of delivery. This principle of shared understanding is important at different levels of the health care system – at the individual level where women go over the trauma of the first birth to gain personal understanding; at the clinical level in an SDM dialogue between the woman, her family, and her care team; and at an organizational level where communication creates mutual understanding of system constraints and provides an opportunity to co-create and share knowledge. Notably, financial incentives did not emerge as an attractor pattern for care provider behaviour in this study. Previous literature has observed that care providers may find it personally convenient and financially lucrative to plan elective repeat caesarean and promote it with their patients (31,100). This may be because all care providers in this sample received a similar fee for service regardless of whether they attended a labour or a caesarean. Similarly, care providers felt motivated to engage with patients in iterative discussions about birth after caesarean options, negating the need to consider incentive strategies to encourage implementation of SDM.

A key strategy for supporting change in a complex system has been outlined by Jordan et al in a theoretical debate piece on the role of conversation in health care interventions:

“In the language of complex adaptive systems theory, one might say that meaning emerges from the self-organization of diverse and responsive agents. The meaning created through dialogue varies greatly in its novelty, ranging from the reinforcement of old beliefs or strengthening existing relationships and power structures to completely innovative ideas existing in the mind of neither individual prior to the conversation. Through conversation, focus of this meaning is narrowed or broadened and options are selected, clarified, reduced, added or created. Such meaning-making may be especially important during intervention attempts.”(198)

In the following chapter I draw on the concept of the complex adaptive system, and the strategies of shared understanding and local collaboration, to discuss the integrated knowledge translation strategy that supported this dissertation. This included using tools – a policy brief and policy dialogues – for knowledge exchange with decision maker and care provider stakeholders to build meaningful social relationships and shared understanding. These strategies aim to facilitate the implementation of patient-centred care and SDM for birth after caesarean in one of the study settings, the Fraser Health Authority.

Chapter 7: Knowledge Exchange to Implement Shared Decision-Making: A Case Example of Partnering with Stakeholders to Optimize Services for Birth after Caesarean

7.1 Introduction

As discussed in the previous chapters, analysis of my findings on women's, care providers', and decision makers' attitudes and experiences with decision-making for birth after caesarean illustrates that bridging the gap between knowledge and action is a complex, nonlinear, process. Focusing on implementation of SDM practices in particular, I have argued that knowledge translation (KT) efforts may be modulated by stakeholders' attitudes and experiences and the complex context in which births after caesarean occur. I also have highlighted that different forms of knowledge inform decision-making – women's experiential knowledge of birth, care providers' and organizations' knowledge of best clinical practices from the scientific literature, and decision makers' knowledge of how that literature fits (or not) in real world health service settings. In exploring what SDM implementation strategies might work for birth after caesarean in the context of British Columbia, I thus began by asking not *which implementation strategies are most effective*, but rather, *what attitudes, experiences, and contextual factors might influence implementation*.

Returning to an argument I made in the Introduction, in an integrated knowledge translation (iKT) research process, different forms of "knowledge" are legitimate. I have sought to explore the different, often competing, forms of knowledge that influence decision-making

for birth after caesarean in British Columbia, in order to understand how to adapt the scientific evidence on SDM for this local context. In Chapter 6 I observed that implementation of SDM for birth after caesarean may be facilitated by dialogue with stakeholders.

Building on that analysis, the aim of this chapter is to describe how I drew on the principle of dialogue to co-produce my research findings in partnership with stakeholders. I adopt the position that the knowledge to action gap for birth after caesarean stems from problems with “knowledge exchange” rather than from issues with creating knowledge tools or transferring knowledge into policy and practice. I describe how I applied the knowledge exchange strategies of dialogue and local collaboration throughout the research process. In this chapter, I hope to provide an illustrative example of KT in practice, which may prove useful to researchers and stakeholders grappling with how to address knowledge to action gaps.

7.1.1 Structure of the Chapter

In the following sections of the chapter, I provide a case example of the KT process that emerged in this dissertation. Through this rich description, I hope to add to the literature on KT practice and demonstrate how researchers and stakeholders may collaborate in clinical and health services research.

7.2 Methods

The objective of my iKT approach was to produce research findings that were more likely to be relevant to and used by stakeholders in British Columbia. Through partnership with my clinical

co-investigator in Fraser Health Authority, in particular, I sought to ensure co-ownership of knowledge and shared responsibility to facilitate sustainable change in practice and policy beyond the timeline of the dissertation.

7.2.1 Terminology

In an international study involving interviews with key informants from 33 agencies involved in knowledge translation, Tetroe et al. identified 29 terms used by experts to describe knowledge translation.(199) Clarifying my definition of “knowledge translation” and related terms locates my study in relation to the existing literature on KT. In the following sections I revisit my definition of iKT, which I first presented in the Introduction (Chapter 1). I then define how I use the terms “knowledge” and “stakeholders,” before describing my use of the concept of “knowledge exchange.”

7.2.1.1 Integrated Knowledge Translation (iKT)

iKT or “engaged scholarship” highlights the role of engaging stakeholders throughout the research process.(3) Doing so aims to “produce research findings that are more likely to be directly relevant to and used by knowledge users.”(9) iKT activities aim to create a sense of shared ownership over research, on the premise that by doing so stakeholders will be more likely to accept research on implementation of SDM and create sustained changes in clinical practice and policy.(21,22) Using iKT processes and partnered research to achieve particular objectives focuses researchers and stakeholders on the same page to create shared meaning,

identify facilitators and barriers to the process of evidence implementation, and co-create empirical evidence to support health service planning. As a result, the partnership process itself is instrumental in implementing sustainable change.(58)

The outcomes of an iKT research process ideally include knowledge that extends beyond scientific research evidence. As described above and in the Introduction, partnered research may produce *evidence in context*, including an understanding of the feasibility of implementation, stakeholder relationships, and policy priorities within different jurisdictions of the healthcare system, and the complex relationships between these factors. Throughout this dissertation I have argued that there is a gap between best practices for birth after caesarean (shared decision-making; reducing medically unnecessary repeat caesareans) and the successful implementation of those practices. I argue that in order to bridge this knowledge to action gap it is necessary to develop strategies in partnership with stakeholders based on both the scientific evidence and the health services and policy context in which decision-making takes place.

7.2.1.2 Stakeholders

In this study, I draw from the traditions of participatory and community action research (200,201) to define “stakeholders” as individuals and organizations involved in receiving, providing, or planning care for birth after caesarean, including patients, care providers, and health service decision makers. Stakeholders in this study are those who may be affected by decisions for birth after caesarean, or whose behaviours and actions may have an effect on

efforts to support SDM for birth after caesarean. There may be stakeholders who benefit from SDM for birth after caesarean and those who feel a negative impact. For instance, implementation of a patient decision aid (PtDA) for mode of delivery could have a positive impact on women in hospital settings where both planned VBAC and elective caesarean are available, but create confusion or disappointment for women in settings without resources to support both options. Stakeholders may include individuals in highly visible positions of influence, such as a hospital Head of Obstetrics or a Director in the Ministry of Health who sets policy and practice recommendations. However, front line staff members may be equally important as they are the individuals who are expected to use healthcare innovations in routine practice. I use the term “knowledge partners” to describe the stakeholders who actively engaged in the study as participants, expert informants, or research collaborators.

“Stakeholder” and “knowledge partner” differ from the more conventional term “knowledge user,” which is used in the KT literature to describe the non-researcher individuals included as members of research teams. CIHR defines a knowledge user as “an individual who is likely to be able to use research results to make informed decisions about health policies, programs and/or practices,” and may include “a practitioner, a policy maker, an educator, a decision maker, a health care administrator, a community leader or an individual in a health charity, patient group, private sector organization or media outlet.”(200,201) However the term “knowledge user” suggests a unidirectional research process, where researchers create knowledge and individuals in policy and practice “use” that knowledge.

Drawing from the work of knowledge translation researcher Vicky Ward and

colleagues,(8) I envision the relationship between researchers and key individuals to be complex and nonlinear, where there is mutual exchange of knowledge resulting in mutual learning (a process commonly termed “knowledge exchange,” which I explain further below). I was particularly interested in partnering with stakeholders whose voices are not typically included in maternity care policy, namely patients, patient advocates, and individuals in rural communities. I chose to work specifically with patients and rural communities based on my previous experience supporting community-based rural maternity care research as a Knowledge Translation Manager with the Centre for Rural Health Research from 2007-2012. My prior knowledge of rural health and patient preferences in maternity care provided me with a foundation for engaging in genuine relationships with patient and rural stakeholders. I also had pre-existing relationships with rural researchers, administrators, and care providers who could act as “gatekeepers” to study communities.

7.2.1.3 Knowledge Exchange

Knowledge exchange is a useful concept for understanding the complex, nonlinear process of engaging in iKT activities. Following Ward’s empirically derived conceptual framework on this concept, I define knowledge exchange as “a fluid, dynamic process involving the proliferation and reinvention of ideas drawn from many different sources via an interactive, interpretive process.”(8) For instance, in a knowledge exchange paradigm, defining a research problem is not a single action that occurs at the beginning of the research process, rather it is a process of defining, refining, and trialling a problem and allowing it to evolve over time. This concept also

adopts an expansive, egalitarian definition of “knowledge” that includes ideas drawn from many different sources via interaction. Social relationships, professional identities, shared attitudes, personal experience, and norms are forms of knowledge that influence KT, making it a social and political process, rather than just an individual or behavioural one. To facilitate effective KT, it is thus necessary to explore the context of the knowledge to action problem and “focus beyond individual behaviour or specific organisational characteristics as barriers to knowledge exchange.” (8) Understanding how knowledge exchange works in different contexts can inform the development and implementation of SDM approaches that suit the needs of specific environments and populations.

Notably, the principles of knowledge exchange can be applied at different levels of the health care system, beyond the health services or policy context. At the clinical level knowledge exchange occurs through SDM, where the patient and care provider exchange knowledge to create a shared understanding of both the patient’s and care provider’s perspectives on a healthcare decision. This is why SDM interventions for patients are commonly termed “patient-mediated knowledge translation.”(202)

In the next section I describe how I operationalized these terms in my study and outline the specific steps in my process. Rather than adopt a rule-bound approach and adhere to the mechanisms of a particular method,(153) I adopted the stance that KT is messy and complex and requires different tools for different stakeholders and settings. Consequently, while my approach was guided loosely by an established KT framework (the KTA cycle), I was pragmatic and employed different KT techniques at each stage of the research process that fit my specific

objectives. iKT functioned as the overarching conceptual approach for my activities with stakeholders, while the concept of knowledge exchange guided our interactions and mutual learning.

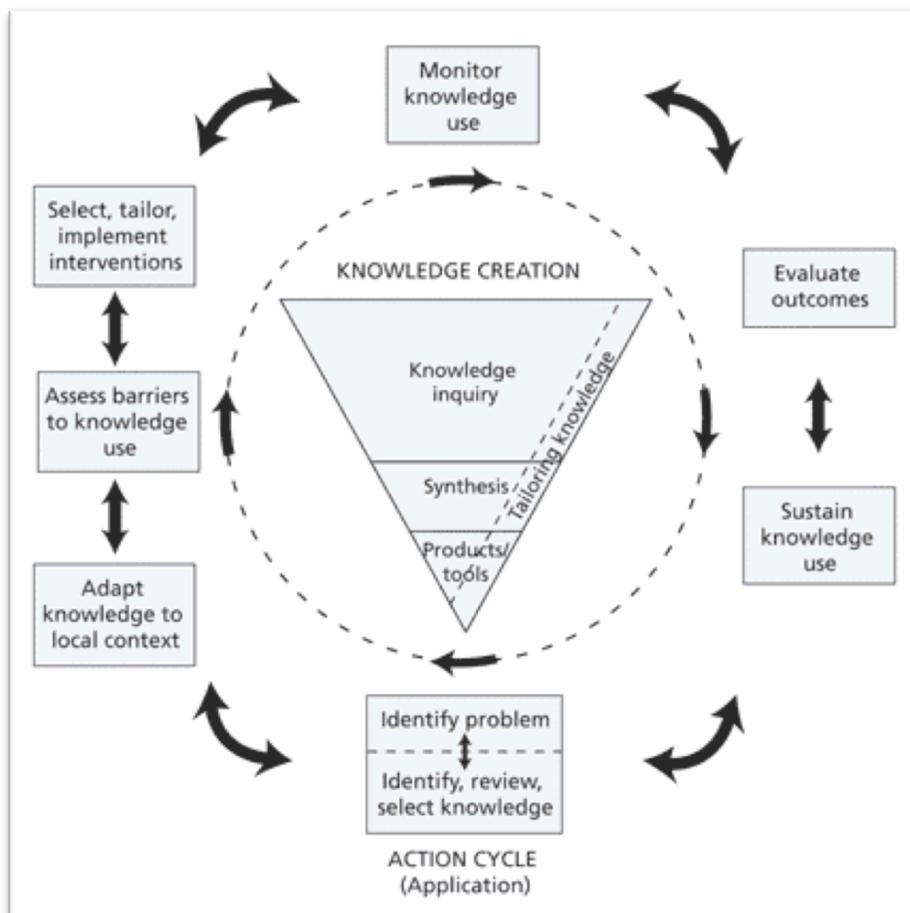
7.2.2 Design

The overarching framework for my KT process was Graham et al's Knowledge-to-Action (KTA) cycle (see Figure 7.1).(20) iKT and knowledge exchange provided a set of concepts and principles for engaging with stakeholders, while the KTA cycle provided a flexible "map" for the knowledge to action process. The KTA cycle is a widely used framework that was developed by researchers within the Canadian Institutes of Health Research following a review of 31 planned action theories.(10) The KTA cycle is consistent with a systems perspective to implementation research, that is, it illustrates the co-evolution of knowledge in research and clinical practice, and feedback loops in the system from past to future.

In their foundational publication on the KTA cycle, Graham et al. emphasized that the KT process is "complex and dynamic," and the boundaries between knowledge creation, knowledge application, and their ideal phases are "fluid and permeable. The action phases may occur sequentially or simultaneously, and the knowledge phases may influence the action phases."(20) In my study, I operationalized the KTA cycle as a framework that identifies *what* the key stages were in my KT process, while the concepts of iKT and knowledge exchange offered a perspective on *who* should be engaged in both the "Knowledge Creation" phase (e.g. the funnel) and the "Action Cycle" and *how* they might engage.

Figure 7.1 Knowledge-to-Action Cycle

Adapted from Graham et al. (20). Reprinted with permission from Wolter Kluwer Health, Inc.



For each phase in the KTA cycle, I partnered with my committee, a clinical co-investigator, patient advocates, and key stakeholder partners to identify our iKT objectives and select problem-focused methods. Table 7.1 outlines the steps in our KT process in rough chronology, including: the phase of the KTA cycle, the iKT objective, the intended stakeholder group, and the activity/output. To maximize the potential for uptake of the research, at each stage of the research I sought to partner with the intended stakeholder group as a partner in the process. For instance in “Identifying the problem” I cast a wide net and sought to partner with as many different stakeholder groups as possible to ensure that different, even competing, perspectives were captured. Later in the “Develop knowledge products” stage of the cycle, I narrowed my focus and targeted health service decision makers as the core intended stakeholder group. During that time, I partnered closely with the Optimal Birth Fraser Health task force to determine the scope, medium, and audience for my research findings.

The final column in the table denotes which stage of the KTA cycle the activities fell under and illustrates that we fluctuated between “Knowledge Creation” and the “Action Cycle” to ensure that we were producing knowledge that met the needs of users in our local study contexts. For instance, I created knowledge each time I returned to the literature review to synthesize more literature in response to problems and questions that developed from data collection, analysis, or through dialogue with research partners. I also developed new knowledge products in collaboration with my research partners (policy brief; presentation for care providers) to support knowledge exchange. Thus the “knowledge” we co-created comprised syntheses of the existing scientific literature, perspectives and theory from my

original qualitative study, and research partners' understanding of how that evidence fit in their context.

Table 7.1 Integrated Knowledge Translation Framework

PHASE	OBJECTIVE	STAKEHOLDERS	ACTIVITY	STAGE
1) Identify problem / Identify, review and select knowledge	Define and refine the knowledge to action problem	Ministry of Health directors involved in women's health, regional health authorities, key informants	Critical review of policy documents; identified key stakeholder groups/individuals and their relationships; conducted informal policy dialogues with stakeholders to determine the scope of the problem	Action cycle
2) Knowledge inquiry and synthesis	Review the evidence on: a) Implementation of SDM in maternity care, b) Attitudes and experiences with decision-making for birth after caesarean	--	Literature review was conducted for the dissertation	Knowledge creation
3) Assess barriers and enablers to knowledge use	Determine barriers and enablers to women's choice of birth after caesarean; explore attitudes toward and experiences with decision-making for birth after caesarean	All stakeholders: Women, care providers, decision makers	Qualitative research was conducted involving in-depth interviews with all stakeholder groups; key themes, barriers, and enablers were identified	Action cycle
4) Develop knowledge products	Translate the dissertation into a policy brief	Health service decision makers	Developed policy/practice recommendations to facilitate women's birth after caesarean	Knowledge creation
5) Adapt knowledge to local context	Pilot test policy brief recommendations	Health service decision makers	(In progress) Policy/practice recommendations were pilot tested with stakeholders through iterative face-to-face meetings; action items were created for different settings and stakeholders	Action cycle
6) Select, tailor, and implement intervention	Select, tailor, and implement interventions for patients, care providers, hospitals, and policy to support SDM for birth after caesarean	All stakeholders	In planning	Knowledge Creation/ Action cycle
7) Monitor, evaluate knowledge use	Process and outcome evaluation of the implementation	All stakeholders	In planning	Action cycle
8) Sustain knowledge use	Develop a community of practice	All stakeholders	Tacit knowledge about the problem and solutions was exchanged; researcher-stakeholder alliances were formed and/or strengthened	Action cycle

7.3 Results

In the following sections I describe how I engaged in KT for this study. I begin by describing how stakeholders were involved as active partners in the planning, data collection, and interpretation of the Birth after Caesarean study. First, I summarize the KTA gap I sought to address and how previous research has approached this issue as a “knowledge transfer” problem. I then describe how I approached the KTA gap as an issue of “knowledge exchange.” I then provide a pragmatic overview of my iKT framework and the objectives, stakeholders, activities, and outputs that corresponded with each phase of the research. In illustrating my iKT process, I draw on preexisting frameworks: Graham et al’s Knowledge to Action (KTA) cycle (20) and Lavis et al’s SUPPORT tools for evidence-informed policymaking.(203) I highlight how knowledge partners and I vacillated between the “Knowledge Creation” and “Action Cycle” stages of the KTA cycle in order to produce relevant research. Finally, I offer a discussion of the next steps for this program of research.

7.3.1 Identifying the Problem

At the outset of the study, I sought “to create a reliable, comprehensive and shared understanding of the issue and care needed to address it.”(58) Issue identification and clarification for this study emerged in collaboration with patient advocates, care providers, and decision-making stakeholders through two activities: 1) critical review of policy documents, and 2) informal “policy dialogues.” Lavis argues that research and policymaking processes are often distinct and asynchronous processes making it unlikely that relevant research will be conducted

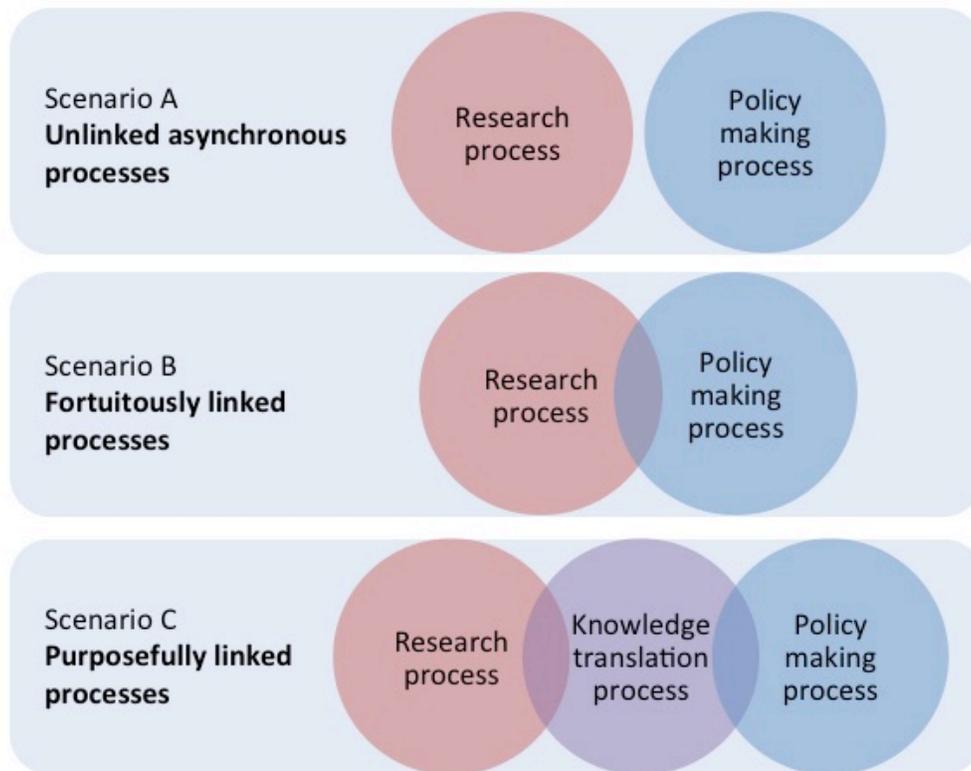
at the exact moment a policy window opens.(204) This again reflects a complex adaptive system perspective whereby the research and policymaking systems co-evolve together. They are interconnected, although the production of knowledge between the two systems is non-linear. Unpredictable changes in the system can cause research and policy agendas to align in opportune ways. Paying attention to the attractor patterns in each system – what is on the policy agenda; what research areas are funders prioritizing; what social values are funders and policy makers prioritizing – may help to align this process in a “purposefully linked” way.

This is the goal in iKT research, to purposefully link the policy and research processes together (see Figure 7.2, scenario C), whereby researchers and stakeholders engage in mutual influence and learning through knowledge exchange, and co-produce knowledge that addresses problems in policy and practice, as well as in patients’ lives, in a timeframe that meets the stakeholders’ needs and facilitates evidence-informed policymaking. One strategy for supporting this process with policy makers, Lavis and colleagues argue, is through “policy dialogues,” which they conceptualize as interactive knowledge-sharing activities that:

- 1) Address a high priority issue,
- 2) Provide opportunities to discuss the problem, potential solutions, and implementation considerations,
- 3) Are preceded by policy documents and discussion about the full range of factors that can influence the policymaking process,
- 4) Ensure fair representation of all stakeholders,
- 5) Remain open-ended, and produce outputs and activities that support action.(205)

Figure 7.2 Research, Policy-Making, and Knowledge Translation Processes

Adapted from Lavis (2004). Reprinted with permission from Wolter Kluwer Health, Inc.



The “high priority issue” for our iKT process emerged in 2014 with the publication of new strategic and operational policies for the BC Ministry of Health, *Setting Priorities for the B.C. Health System*.(206) Priority #1 was “Provide patient-centred care,” and the Ministry produced supporting policy documents specifically on patient-centred care (*The British*

Columbia Patient Centred-Care Framework)(57) and three clinical priority areas: surgical services,(207) rural health services,(208) and primary and community care.(209) These documents emphasized that strategies to implement patient-centred care would include incorporating patient values into care plans, information sharing, and patient engagement in decision-making,(57) which clearly aligns with SDM. These high-profile policy shifts within the Ministry of Health were an opportune policy moment unlinked to our ongoing research on optimizing women's access to maternity services (Figure 7.2, scenario A). I critically reviewed these policy documents and then met with stakeholders to define and refine the policy issue from their perspectives.

The key knowledge partner involved at this stage was Optimal Birth Fraser Health (formerly Fraser Health Caesarean Task Force), a multidisciplinary group of health service decision makers, family physicians, midwives, nurses, and obstetricians affiliated with Fraser Health, one of five regional health authorities in the province. The task force had been mandated to address rising rates of caesarean section, but from the perspectives of patient safety and quality of care. The task force had convened just as the Ministry of Health priorities were being published and did not explicitly include a mandate to promote patient-centred care at that point. My senior supervisor (PJ) had a longstanding history of actively partnering with Fraser Health to address pressing clinical problems through co-production of local audit and feedback data. This relationship allowed us to form a strategic alliance to understand the issue of SDM for birth after caesarean and access to health service resources in Fraser Health. Thus 2013-14 produced policy moments germane to our research interests in 1) patient-centred care

and 2) access to the health services that support women's choice of mode of delivery after caesarean.

One limitation of Lavis's approach to policy dialogues is that by identifying a high priority policy issue at the outset of the process, that issue and form of knowledge may be privileged above other priorities – such as those perceived by patients or evidenced in the research literature. To avoid normatively reinforcing a policy agenda, I attempted to bring these different and somewhat competing forms of knowledge together at the outset. I met and discussed the subject of birth after caesarean with patient advocates who provided doula care to childbearing women with a history of caesarean in the Greater Vancouver region. These conversations provided opportunities for me to involve patient advocates in an early stage of the research process, test research and interview guide questions with them, and ensure that my approach was grounded in women's perceived needs.

I also engaged in dialogue with key informants to understand the perspectives of care providers and decision makers in other regional health authorities. I sought a legal perspective from a lawyer who had represented families in high profile cases of obstetric malpractice. I also spoke with care providers at BC Women's Hospital, the largest maternity facility in western Canada, who had tried to implement SDM for birth after caesarean in recent years. Throughout, I also had informal discussions with childbirth advocates across British Columbia, including doulas, public health nurses, and community-based workers affiliated with the BC Association for Pregnancy Outreach Programs, a provincial network that provides support and education to vulnerable women in the childbearing year.

At the outset of the research process, dialogue was initiated primarily by Dr. Janssen and myself, reflecting “push” KT strategies of dissemination and diffusion to inform knowledge users about the research, gain their feedback, and encourage their participation. However, over time the number and scope of knowledge users engaged in the project grew, leading to an increasing amount of “pull” requests from care providers and decision makers for information on the program of research, how to get involved, and what the findings might mean for birth after caesarean in their local context.

Rather than adopt a formal approach to policy dialogues as suggested by Lavis and colleagues, our approach was opportunistic, pragmatic, reflected our real-world relationships, and included both formal and informal discussions with Optimal Birth Fraser Health members. Throughout I was mindful of Lavis and colleagues’ key considerations for a policy dialogue process (203), which in our case example included:

- 1) Addressing a high priority issue (patient-centred care; the rising repeat caesarean rate);
- 2) Taking opportunities through monthly in-person meetings with Optimal Birth Fraser Health to discuss the problem, co-develop the Birth after Caesarean research study, and discuss potential policy and practice actions resulting from the research findings;
- 3) Discussing the Ministry of Health’s and regional Health Authorities’ strategic policy priorities and the diverse factors that influence policy and practice; and
- 4) Ensuring fair representation of all stakeholders, by seeking out and discussing the dissertation and policy issue with key informants outside of Optimal Birth Fraser Health, including patients and patient advocates;

5) Remaining open-ended to different viewpoints and sources of knowledge.

These informal policy dialogues were nested within Optimal Birth Fraser Health meetings, where I was an invited guest with a predefined amount of time to engage in discussion about the evolving study design. As an invited doctoral student, it was not within my purview to involve patient advocates or other stakeholders in these meetings, so to assure fair representation I took time in each meeting to update the group of care providers and decision makers on the perspectives of patients advocates, rural stakeholders, and provincial decision makers. I encountered few challenges while engaging in the policy dialogues, primarily due to the enthusiasm of this group of decision makers and interest in my research process.

Through these informal policy dialogues we discovered that women's eligibility for planned VBAC varied widely from hospital to hospital. We reviewed rates of planned VBAC by hospital around the province, as well, and observed similar geographic variation in rate of planned VBAC that could not be explained by clinical or demographic conditions. We also learned that nurses, although not primary maternity care providers, may discuss birth after caesarean options with women at different time points in their childbearing journey and may play an understudied role in the decision-making process. Finally, stakeholders suggested through the dialogues that limited access to operating room and anaesthesia services influenced care providers' willingness to support planned VBAC in urban settings. They were interested to know how some small rural services in the province were able to provide women safe access to the option of VBAC in the face of limited surgical resources.

Over the course of approximately six months, I collaborated with my supervisory committee, clinical co-investigator, and Optimal Birth Fraser Health to define and refine the issue into two questions that were meaningful to clinical practice: Why do our patients choose repeat caesareans and what can our care teams do to support patients to attempt VBAC births? However, recognizing that decision makers, clinicians, and researchers do not ask the same questions,(210) I further distilled these into a series of researchable questions to identify barriers and enablers to women’s choice of birth after caesarean from the perspective of all key stakeholders:

- 1) What are women’s attitudes toward and experiences with choosing mode of delivery after caesarean in British Columbia?
- 2) What are care providers’ attitudes toward and experiences with providing care for women considering mode of delivery after caesarean in British Columbia?
- 3) What are decision makers’ experiences with planning services for birth after caesarean in British Columbia?

The methodology for exploring these three research questions (Chapter 3) was collaboratively designed with Optimal Birth Fraser Health. After data collection and qualitative analysis (Chapters 4-6), the results were interpreted in collaboration with these knowledge users so that they could assess the applicability and transferability of the results to comparable settings.

7.3.2 Engaging in Knowledge Inquiry and Synthesis

This stage of the KTA cycle involves the methodologically rigorous synthesis of studies or information relevant to the research question to make sense of all relevant knowledge on the subject.(20) As with defining the problem, writing the literature review was an iterative process. I outline in Chapter 3 how I delved into new literature as new theoretical insights emerged from my qualitative data collection and analysis. Writing the literature review began at the outset of my doctoral program of research to provide an understanding of the existing published research on decision-making for birth after caesarean. I explored the published literature on women's, care providers', and organizational attitudes and experiences toward decision-making for birth after caesarean, as well as research on implementation of SDM for birth after caesarean. As my research questions evolved through knowledge exchange with stakeholders, I continued to search and analyze the extant literature, and returned the findings of those later syntheses to my research partners. For instance, after contacting the Ministry of Health to request an interview for my study, they in turn requested that I provide them some evidence on planned VBAC and shared decision-making. I updated my early literature review and packaged it as a formal evidence synthesis, which the Ministry has since used to inform their forthcoming Women's Health Strategy. Similarly, during data collection and analysis I identified new avenues of inquiry and added to the review to set the stage for how my grounded theory answers those questions. As I explained in Chapter 3, this flexible, adaptive approach is encouraged in KT research to understand the mechanisms and circumstances that underpin implementation of complex interventions such as SDM.(87)

7.3.3 Assessing Barriers and Enablers to Knowledge Use

The first round of my qualitative analysis resulted in an emerging theory of the processes that women, care providers, and decision makers undertake with regard to decision-making for birth after caesarean: *Women seek control in the midst of uncertainty*; Care providers and decision makers *support women to make the choice* for birth after caesarean and “*make it work*” *in the midst of limited access to services*. In the second round of my analysis, I aimed to explain the significance of these original concepts for an audience of implementation and health service researchers. Using the lens of complex adaptive systems (CAS) theory I described how an array of factors influence individuals to engage in seemingly irrational decision-making behaviour and how their behaviour may be adapted to support evidence-based practices. This analysis revealed the complex, interwoven contextual factors that pose challenges to SDM for birth after caesarean. These included women’s experience of birth trauma, their early and recurrent preference formation for mode of delivery, and limited access to the surgical and anaesthesia services that support the option of planned VBAC.

By engaging in these analyses I further identified the contextual factors that influence SDM for birth after caesarean and identified that the problem was one of knowledge exchange rather than knowledge transfer. The issue at hand with regard to birth after caesarean was not only barriers and facilitators in discrete parts of the healthcare system, but also the interplay between those factors and between different systems (e.g. temporal, legal, environmental, and interprofessional). It was clear that change needed to be made within and between different

levels of the healthcare system in order to support SDM for birth after caesarean. For instance, an important antecedent to implementation of SDM was having both options of mode of delivery available for women. However, in Fraser Health, care providers and decision makers felt that to make continuous safe access to VBAC possible, health service decision makers would need to increase funding to increase levels of anaesthesia service and decrease competing access with other specialties to the OR. The small rural communities in this study had fewer resources, yet this was not a barrier to SDM for birth after caesarean in the north. Consequently Fraser Health stakeholders also wished to know more about the model of care in the north and particularly how the rural towns provided planned VBAC without in-house anaesthesia.

My analysis illustrated the need to add strategies to our iKT process that would encourage knowledge exchange through dialogue among the clinicians who provide services for birth after caesarean and the health service decision makers who plan surgical and anaesthesia services, and between Northern and Fraser Health. Different stakeholder communities needed different knowledge and interventions to address SDM for birth after caesarean, reflecting differences in their environment, relationships, and attitudes. In the following sections I describe how I encouraged such dialogue through multiple strategies – by nurturing a community of practice, and by creating and discussing a policy brief with stakeholders.

Although outside the scope of this dissertation, I also am working with members of the research team (PJ, SK) to secure funding for a consortium on normal birth – a knowledge exchange meeting planned for November 2016 where we will bring together stakeholders from

around the province and where discussion will include different models of service to support planned VBAC. This meeting will include participation from key stakeholders from each of my study communities in order to respond to Northern and Fraser Health participants' interest in learning from each other.

7.3.4 Developing Knowledge Products

After identifying the problem, conducting a literature review, and engaging with knowledge users to co-produce knowledge on the barriers and enablers to evidence-based practice for birth after caesarean, we had co-developed local evidence that addressed Optimal Birth Fraser Health's first question: *Why do our patients choose repeat caesareans?* We then turned to their second question regarding actionable next steps: *What can our care teams do to support patients to attempt VBAC births?* This phase of the KTA cycle involved working with local evidence on birth after caesarean decision-making that emerged from analysis of participants' narratives in Northern and Fraser health authorities, considering how these findings compared to the previous literature and might be transferable to comparable settings, and focusing on what solutions might work at the patient, clinical, and organizational levels to promote sustainable, evidence-based practices for birth after caesarean.

Knowledge products are practical tools that present knowledge in clear and concise formats and provide explicit recommendations or guidance for different stakeholder audiences.(20) The aim of knowledge products is to influence stakeholders' behaviour or actions and meet their information needs, in order to bridge specific knowledge to action

gaps.(20) Research syntheses, clinical practice guidelines, patient decision aids (PtDA), policy briefs, and social marketing toolkits are all examples of knowledge products. In keeping with my overarching goal of facilitating knowledge exchange in this research process, my knowledge product goal was to develop tools that would generate dialogue with stakeholders and support particular behaviours.

Based on recommendations from my research partners on what modalities work best for care provider stakeholders around British Columbia, I chose to develop a research presentation that provides an overview of the study, my findings, and actionable recommendations. I focused on those actions that are relevant to clinical practice in different settings depending on where I give the presentation (e.g. my rural study communities, larger teaching hospitals, different provinces). I am in the process of giving this presentation to knowledge partners in each of my study communities. For childbearing women, I will develop, evaluate, and implement a PtDA. The PtDA will be developed in future in partnership with Fraser Health Authority as part of our continued research partnership. Finally, for health service decision makers, I discussed different knowledge product options with Optimal Birth Fraser Health and with my committee. Their recommendations and the consensus from the literature was that the most impactful approach would be for me to create a policy brief that summarized the research and put the findings in context for health service decision makers. Most importantly, we agreed that I should actively disseminate the policy brief through face-to-face meetings. The policy brief has been developed and used in knowledge exchange activities to

date, as I outline below, while the research presentation and PtDA knowledge products are still in progress.

7.3.4.1 Developing a Policy Brief

Together with Optimal Birth Fraser Health, we translated the research findings into a policy brief that systematically highlights what is known and not known about choosing birth after caesarean in British Columbia, options for addressing barriers, and potential enabling strategies to implement best practices in SDM (see Appendix C).

Drawing from Lavis and colleagues, I consider policy briefs to be a form of “evidence packaging” – rapidly produced summaries that address decision makers’ needs for timely knowledge on a priority issues, present knowledge on an underlying knowledge to action problem, describe how to address the problem, and offer key implementation considerations.(211) Policy briefs help decision makers access research findings that are tailored to their decision-making needs and may help bridge the gap between knowledge and action.(212) There is limited evidence on which policy brief format is most usable to audiences. The Canadian Health Services Research Foundation (CHSRF) 1:3:25 template of a 1 page structured abstract, 3 page executive summary, and 25 page report provides increasing detail with each iteration.(211) This template is widely-recommended, however the effectiveness of this format for impacting policy is unclear due to its limited evaluation.(213) A more compressed approach is that of research summaries, two-page documents written for non-academic audiences that engage plain language writing and design principles. This alternative

format may be better suited for providing an introduction to a research study, however its effectiveness is again unclear.(214)

For this policy brief, I began with the research summary format and then engaged in iterative rounds of collaborative feedback and redesign with my supervisory committee, my clinical co-investigator, and Optimal Birth Fraser Health to “package” the knowledge from the Birth after Caesarean study in a format that would suit the needs of a range of health service decision makers in BC. This echoed Lavis and colleagues recommendation that at least one policy maker, one stakeholder, and one researcher should review a policy brief for its scientific quality and system relevance.(211) I also invited two patient advocates to review the policy brief to ensure that I had represented women’s stories effectively. One of the patient advocates suggested I include a richer description of women’s birth after caesarean decision-making experiences, so I included quotes from participants in sidebars.

In the policy brief, I emphasized the importance of addressing barriers and facilitators at different levels of the healthcare system and provided recommendations at the patient (micro), care provider (meso), and health planning and policy (macro) levels. The recommendations are relevant for the study regions and individual communities included, but may be transferable to similar settings. The recommendations aim to support patient decision-making (Recommendations 1-5) and clinicians and health services (Recommendations 6-7). I illustrate that an intervention at one level of the system will have downstream effects, and that recommendations take place in the context of complex environment and relationships. The recommendations include:

1. Develop standardized regional and/or hospital-specific protocols that support care providers to engage in shared decision-making for birth after caesarean beginning before hospital discharge, and continuing in clinic visits during the first 6 weeks postpartum. Shared decision-making includes discussion of risks and benefits, actively listening to the woman's expression of her values, helping the woman understand what factors of the decision matter most to her, and making a decision together.
2. Create consistent, evidence-based provincial and/or national resources to support shared decision-making and legal consent for mode of birth after caesarean. Resources should include accurate risk estimates, information on the medical, personal, and social attributes of the decision, including mental health concerns, and describe the available resources and time required to attend an obstetric emergency.
3. Support clinicians to "debrief" with women about their primary caesarean experience beginning in the first 6 weeks postpartum, and continuing in the first trimester of the subsequent pregnancy. This dialogue may include answering women's questions, establishing their eligibility for planned VBAC based on SOGC clinical practice guidelines, encouraging eligible women to consider VBAC for future pregnancies, and reviewing the antenatal chart and operative report with the woman.
4. Identify the need for and provide mental health support services to women who experience an unplanned caesarean to mitigate the effect of birth trauma on future reproductive choices.

5. Implement continuous skin-to-skin contact after caesarean and family-centred post-surgical recovery practices.
6. Address concerns about limited access to obstetric, anaesthetic, and pediatric services and increase these resources where appropriate. This may include pooling resources to provide dedicated 24/7 in-house obstetric anaesthesia and a dedicated obstetric OR where population size and demographics warrant this level of service.
7. Make planned VBAC a provincial facility-level maternal indicator and set facility targets. Additionally monitor and evaluate indicators for VBAC eligibility, planned VBAC, and actual mode of delivery after caesarean.

7.3.4.2 Using the Policy Brief to Catalyze Dialogue

Continuing with the theme that KTA gaps may be a result of knowledge exchange, rather than knowledge transfer, problems, I chose not to passively disseminate the policy brief to stakeholders. Rather I first emailed the policy brief to knowledge partners for their review and then scheduled face-to-face meetings with each person or organization so that we could sit together and use the policy brief as a tool to guide our discussion about what the research meant in different settings around the province. This also allowed me to engage in further mutual learning and ensure that audiences understood the difference between the paradigms of informed choice, informed consent, and shared decision-making, as confusion about these concepts was a finding from care provider and decision maker narratives (Chapter 5). The rationale for adopting an active rather than passive approach to dissemination is based on the

body of evidence demonstrating that passive dissemination of materials alone may fail to change practice because of a stakeholder's disagreement with the content of materials, personal characteristics of stakeholders, and logistic or financial barriers to implementation.(41,215)

Dialogues were held with Optimal Birth Fraser Health, Department Heads of Obstetrics in the Fraser Health region, directors in the Ministry of Health and Perinatal Services BC, and multidisciplinary groups of clinicians and hospital managers in each study site. This included planning significant travel around the province to ensure that I was present in person. Continuing an open dialogue with stakeholders aimed to bring the static document to life and co-produce shared knowledge about the problem and potential solutions that fit the needs of a range of different knowledge users, from individual clinicians in small rural communities who support women at the point of care, to executives responsible for provincial priority setting. By engaging in this dialogue, stakeholders and I were also able to consider the transferability of the qualitative findings to other settings, how the findings compared to the published literature, and how stakeholders *felt* about the study findings as birth after caesarean is an emotionally and politically charged topic.

Stakeholders' feelings about the study findings varied depending on their attitudes and experiences. While the majority agreed with the results and expressed interest in partnering on next steps, not all received the research findings and policy brief in a positive light. One knowledge exchange meeting, in particular, revealed that there was historical tension between one group of institutional decision makers and individual care providers. The decision makers

reacted strongly to one of the recommendations in the policy brief, claiming that it must reflect the biased remarks of this particular group of care providers. They consequently questioned the validity of the study. Although the policy brief indicated that this particular recommendation stemmed from a key theme observed in three of the five study communities, the decision makers opposed it based on their attitudes and beliefs toward birth, which clearly differed from those of the care provider group. This particular meeting was an illustrative example of how knowledge exchange can involve a collision of different perspectives and reveal new factors that influence the research to action process. As knowledge translation researcher Ward noted, “knowledge exchange is a social and political rather than behavioural phenomenon which involves professional identities and norms in addition to individual beliefs. These norms can be the source of resistance to particular forms of knowledge exchange where the latter is perceived as a threatening or destabilising influence.”(8)

In contrast, in most face-to-face meetings I observed that physicians were particularly interested in the key finding that women form a preference for mode of delivery soon after their primary caesarean, before being fully informed of their options and the clinical risks and benefits. Physicians identified the six-week post-caesarean check up as an important opportunity to begin SDM for future deliveries. Health service decision makers expressed interest in addressing patient safety and litigation concerns about access to the operating room. This led to discussions about the potential of PtDAs to act as both a SDM tool and a step in the informed consent process to give women full information about resources available while still promoting VBAC as a reasonable and safe option. Care providers in one rural community

additionally suggested that SDM could be supported in their setting by different members of the interprofessional primary maternity care team they were working to establish, including nurses, peer support workers, physicians, and allied health professionals. As intended, the policy brief drew stakeholders' attention to the evidence, allowed us to discuss the research in their local context, and led to co-production of ideas for actionable next steps to implement SDM while addressing barriers at the patient, clinician, and organization levels.

7.3.5 Adapting Knowledge to Local Context

This phase of the KTA cycle is still in progress and will continue beyond the scope of my doctoral studies. In adapting knowledge to local context, knowledge translation researchers Graham et al. mean "the process individuals or groups go through as they make decisions about the value, usefulness, and appropriateness of particular knowledge to their setting and circumstances. It also encompasses those activities that they may engage in to tailor or customize the knowledge to their particular situation." (20) Regarding activities, I engaged in knowledge exchange to customize and contextualize the knowledge from this study for the setting and circumstances of different decision maker stakeholders.

Specifically, in my policy brief I sought to clarify the issue, provide local evidence, and offer broad recommendations for different stakeholder groups who serve patients, care providers, decision makers, and government in different settings around the province. To allow the recommendations to be tailored to different decision makers' settings, I did not suggest concrete, actionable solutions for stakeholders, rather I sought to co-develop solutions with

stakeholders through dialogue to ensure that any recommended actions would be useful and usable to the individuals and organizations who would be engaging in them. This follows Ward et al's empirical study of knowledge exchange, which involved observational and interview data investigating the nature of knowledge translation in three clinical practice settings in the UK.(8) The authors observed that "healthcare delivery and organisation is characterised by uncertainty and there are often no clear answers to the challenges which need to be faced. The knowledge which is needed to solve problems and bring about changes is likely to be distributed throughout organisations and to come from many different sources."(8)

In Fraser Health Authority, for instance, there was a great deal of interest in Recommendation 2 on SDM tool development and Recommendation 6 on access to surgical services. In response, I compiled evidence syntheses on effective strategies to address these two subjects and gave the stakeholders a presentation on options for actionable next steps. Fraser Health care provider and decision maker stakeholders indicated that, to act on the recommendations, we would benefit from engaging with hospitals in the region beyond my two study sites and with the regional OB department heads. This knowledge exchange was unexpected and led to identification of individuals across the system who would need to be involved in change.

7.3.6 Selecting, Tailoring, and Implementing Interventions

This stage of the KTA cycle is concerned with working with stakeholders to select, tailor, and implement interventions that respond to identified barriers for specific groups. While outside

the scope of this dissertation, I am in the early stages of co-developing two interventions that respond to the recommendations of interest to Fraser Health. These include a multifaceted SDM intervention involving a PtDA for mode of birth after caesarean, and a knowledge exchange event for Fraser and Northern Health communities to learn how rural sites manage planned VBAC with limited access to surgical services.

7.3.7 Monitoring and Evaluating Knowledge Use

In future, I will participate in monitoring and evaluating the implementation interventions that result from the knowledge co-produced through this dissertation in my role as a postdoctoral research fellow.

7.3.8 Sustaining the Project through a Community of Practice

There were a number of intended and unintended consequences of the iKT process that set the stage for a long-term researcher-partner collaboration. In the KTA cycle, “sustaining knowledge use” typically occurs at the end of the Action Cycle, after knowledge has been created, implemented, and monitored. However in an iKT approach, researchers and stakeholders work from day one to form relationships and think creatively about ways to sustain those relationships and the co-production of knowledge in the face of limited time and resources.(3,40) In their commentary on iKT, which they describe as a critical “second look” at the framework, Kothari and Wathen draw on the “two communities” theory, which posits that researchers and policy stakeholders come from distinct worlds and value-systems. They posit

that iKT facilitates close interactions between researchers and policy stakeholders during knowledge production and application to create a bridge between their two distinct worlds.(216) This reflects a complex adaptive systems perspective that different systems co-evolve and interact. The resulting researcher-stakeholder alliance “makes space for an additional, ‘value-added,’ communal perspective” or “community of practice” characterized by facilitating the development of a shared language, common stories, and a joint understanding of the problem at hand.(216) Building on the assumption that meaningful relationships with stakeholders might catalyze and sustain knowledge co-production, I endeavored to develop a holistic understanding of the problem of birth after caesarean from different stakeholder perspectives, and to understand what SDM meant in different contexts and in the day-to-day realities of clinicians and decision makers.

Through the dialogues with Fraser Health care providers and decision makers, I developed a better understanding of the complexity of the decision-making environment for maternal health services and the competing priorities facing health service managers, in particular the important role of regional strategic plans and, upstream, Ministry policy in determining who and what gets funded. This perspective allowed me to better understand what might motivate different stakeholder groups to adopt evidence-based practices for birth after caesarean. Sitting at the table with Optimal Birth Fraser Health members (which included midwives, physicians, hospital managers, and regional decision makers) at their monthly meeting also gave me a better understanding of what vocabulary to use when communicating with different health care professionals to create shared understanding. To ensure the

relevance of the research process to Optimal Birth Fraser Health, I also gave regular presentations on preliminary research findings. This allowed for mutual learning – I gave the knowledge users snapshots of my research in an effort to keep them engaged in the study, and they provided context and insights on the patterns I was observing.

Observing relationships between the different stakeholder groups and individuals also gave me insight into who worked together well, who held power, and what their motivations were. This allowed me to identify individuals who could facilitate introductions with hard-to-reach participant groups, such as busy obstetricians and members of the Ministry of Health. My clinical co-investigator, for instance, provided me an introduction to a regional decision maker, who then introduced me to a provincial decision maker. This “snowball sampling” approach is a common method for participant recruitment in qualitative research, but it also allowed me to map out stakeholder relationships and, in turn, for stakeholders to see who was entrusting me to be involved in their policy planning process. As a result of these relationships, I was sought out by the BC Ministry of Health to provide an evidence review on VBAC midway through my data collection, and by the Ontario Provincial Council for Maternal and Child Health to provide expert guidance on their VBAC quality standards project. The six months of relationship building, information sharing, and mutual learning laid the foundation for a meaningful researcher-stakeholder alliance that helped to sustain the dissertation study and open up new opportunities to co-produce knowledge with stakeholders in Fraser Health.

7.4 Discussion

Following an iKT strategy for bridging the knowledge to action gap and Graham's KTA cycle for knowledge translation in healthcare, I approached the problem of implementing SDM for birth after caesarean as an issue of knowledge exchange, rather than knowledge transfer. The KTA cycle was dynamic, easy to operationalize, and allowed for knowledge partners and I to move between the "Knowledge Creation" and "Action Cycle" sections of the framework in a nonlinear fashion as needed. Although the KTA cycle was limited in that it provided no guidance on *how to engage with stakeholders*, it provided enough flexibility to allow me to draw on actionable concepts and principles from other frameworks, including iKT and knowledge exchange.

My qualitative analysis illustrated how "transferring" evidence-based SDM tools and skills to knowledge users may not be effective unless important antecedents are addressed. Namely, women begin to form their preference for birth after caesarean before their subsequent pregnancy, based on non-medical factors and knowledge from their primary caesarean, peers, and the Internet. This indicates the need to create SDM tools (knowledge products) that address the real world context of how women make decisions for birth after caesarean. At a care provider and health system level the key antecedent to SDM for birth after caesarean was having both options of mode of delivery available to women. In urban Fraser Health, access was limited due to resources constraints in anaesthesia and surgical services, while in Northern Health these factors did not influence decision-making in small rural communities. This indicates the need to address these inequities in access at a policy level, otherwise implementation of SDM in routine practice will be ineffective in some setting where women do

not have equal access to both options of mode of delivery.

In order to address these systemic factors, my focus for the iKT relationships in this dissertation was primarily with care providers and decision makers in Fraser Health Authority and the Ministry of Health, who were the “lightning rods” positioned to catalyze significant change at a systems level. At a patient level, I partnered with patient advocates, engaged women through the qualitative interviews, and I shared their narratives with care provider and decision maker stakeholders. Different iKT objectives with patients will be necessary at a later stage of the KTA cycle. Although patients were not active partners at the decision-making table, there will continue to be patient advocates involved in future stages of the development of tailored interventions to support implementation of SDM. For this dissertation, the evolving iKT process illustrated that it was necessary to partner actively with stakeholders in the meso and macro levels of the healthcare system, before any micro level patient change could take place.

The iKT process, coupled with the rich findings from qualitative analysis of stakeholder interviews, indicated that a number of knowledge exchange strategies could support implementation of SDM across different levels of the healthcare system. Care providers would benefit from health system and resource support for birth after caesarean, as well as information about gaps in current care and the impact of these gaps on women’s experience and decision-making. These actions would be an important precursor to offering women both options of mode of delivery after caesarean. It was also clear that women needed better information, timed earlier. This included information on non-medical attributes of the decision, and an opportunity to debrief with care providers to promote knowledge exchange at the

clinical level around what happened in the primary caesarean. A debriefing visit at the 6 week postpartum mark and a patient decision aid were identified through literature review and dialogue with stakeholders as tools that could facilitate patient level behaviour change around becoming informed. Decision makers at hospital, regional, and provincial levels also needed to learn about the relationships between SDM barriers at different levels of the system, including the influence of different models of care, the factors that inform women's preferences, and the profound impact of resource shortage issues on access to VBAC.

A number of ethical considerations emerged as part of the iKT process that warrant consideration for future research. As discussed in Chapter 3, informed consent took place with individual research participants, and many participants were also knowledge partners who collaborated in the research process. During the research design stage of the study, knowledge partners and I had opportunities to negotiate the type of identifiers I would include in my iKT activities and outputs. We agreed that I would de-identify interview data and change details where necessary to minimize the potential for personal or professional harm, particularly if participants spoke negatively about their health service environment. At the level of the study site, all participants consented to have their community named in iKT outputs. Participants were in fact eager to learn about examples of health service success stories in other named communities and did not perceive that identifying information at the community level would lead to potential harm. Rather participants were eager to share their challenges and pitfalls because it could lead to benefits including attention from the Ministry of Health and ideas for health service solutions from peers in other communities. These perspectives may not be

shared in other health service environments and future research should consider the ethical implications of identifying study communities in iKT outputs.

The next steps in bridging this knowledge to action gap involve continuing to partner with Fraser and Northern Health to select, tailor, and implement interventions for patients, care providers, hospitals, and policy to support SDM for birth after caesarean. We will conduct an evaluation of our iKT activities before embarking on this next phase of the study. The indicators included in our iKT evaluation plan will assess the iKT process, reach and engagement, usefulness, use, collaboration, and capacity building. Data will be collected by a survey I will co-develop with Fraser Health research partners and it will be offered to all who participated in the study, as well as research partners who participated in iKT activities. Evaluation findings will be useful for designing our future iKT strategies for engaging and collaborating with different stakeholders. Following implementation of interventions for patients, care providers, hospitals, and policy to support SDM for birth after caesarean, we will monitor, evaluate, and sustain knowledge use through iterative process and outcome evaluation, and nurture a community of practice. This work of the KTA cycle (Table 7.1) extends beyond the scope of the dissertation and will be the focus of future research. I will also continue the iKT process to understand transferability. Through iterative informal policy dialogues with stakeholders throughout the system, I am seeking to understand: What do the findings from this single study mean in different populations? Is the evidence transferable to other hospitals and patient populations?

7.5 Conclusion

In order to break down the siloes between academia and the healthcare system, it is necessary to abandon the traditional knowledge transfer paradigm and move toward knowledge exchange and the co-production of knowledge. This chapter offered a practical example of how knowledge users were engaged in my dissertation process – identifying the problem, sustaining knowledge use, and developing knowledge products. In the following chapter I discuss the findings of this dissertation in relation to the existing literature and opportunities for future research.

Chapter 8: Discussion and Conclusion

8.1 Overview

In this dissertation I offer important insights regarding the nature of decision-making for birth after caesarean and the contextual factors that influence implementation of SDM for this decision in five BC communities. The knowledge to action gap for birth after caesarean is an issue of knowledge exchange. Women make the choice for mode of delivery before their subsequent pregnancy, based on knowledge from their personal experience, social relationships, and the Internet. Care providers have a poor understanding of the attributes of mode of delivery that matter most to women, which vary by individual but generally include the desire to have uninterrupted bonding with their newborn in the immediate postpartum. This demonstrates a clear knowledge exchange gap at the clinical level between women and their care providers. Health service decision makers provide insights into a range of factors that extend beyond the patient-provider dyad. These health service factors include concerns regarding access to anaesthesia and operating room resources. In the small rural communities, where resources were limited but not a patient safety concern, primary maternity practices led by obstetrician champions promoted SDM and normal vaginal birth. Given the empirically and theoretically derived findings in this dissertation, there are a number of important implications for implementation of SDM. The dissertation findings are particularly salient to policy makers seeking to reduce unnecessary caesareans and implement patient-centred care.

8.2 Summary of Findings

8.2.1 Women's Narratives

Chapter 4, *Seeking Control in the Midst of Uncertainty: Women's Experiences of Choosing Mode of Delivery after Caesarean*, provided insights into BC women's decision-making attitudes and experiences. The core of theme of "seeking control in the midst of uncertainty" captured women's experience of losing control of their choice of mode of delivery in their first birth. Participants who had an unplanned caesarean in particular described the moments in their birth where they experienced feeling "out of control" or "losing control" over their decision-making authority, their body, and their desired childbirth experience. Making the decision for birth after caesarean was a process of seeking and regaining control over their sense of self, identity, and autonomy. Findings also highlighted the importance of considering the synergistic relationship between different factors that influence women's choice of mode of delivery, including the timing of women's preference formation for mode of birth after caesarean, the role of social birth stories and risk information in shaping those preferences, and the availability of options, which depended on their care provider's scope of practice and geographic location.

To help women make informed shared decisions for mode of delivery after caesarean, clinical teams, hospital environments, and policy makers must recognize that the locus of decision-making happens between pregnancies. Previous intervention studies on women's decision-making for birth after caesarean have focused on timing interventions *during* pregnancy, after eligibility has been assessed. Shorten et al. conducted a subanalysis of 212 women's preferences for mode of delivery using data from a Australian randomized controlled

trial evaluating a patient decision aid for mode of delivery after caesarean.(217) Women were surveyed prior to any exposure to a decision aid, first in early pregnancy (12-18 weeks gestation) and again in mid-pregnancy (28 weeks gestation), and analysis sought to determine if women's preferences changed or remained stable during that interval. At 12-18 weeks gestation, 82% of women expressed a preference for mode of delivery, 119 for planned VBAC (56.1%) and 55 for elective repeat caesarean (25.9%), while 38 were unsure (17.9%). Over the course of approximately one trimester of pregnancy, the rate of women who were unsure of which mode of delivery they preferred rose to 25% (n=53) at 28 weeks gestation. The authors found a significantly higher rate of preferences for elective repeat caesarean among women who gave birth in a setting with high repeat caesarean section rates, and among women who had high scores for postpartum depression and anxiety. The authors suggested that interventions to support women's choice of birth after caesarean should be administered prior to 28 weeks gestation, while women's preferences are still in flux.

While the ideal timing of interventions for women choosing mode of birth after caesarean has not been established (80), findings from our present study indicate that women would benefit from decision support as early as the immediate postpartum following a primary caesarean. For some participants forming a preference for mode of delivery and gaining confidence in that choice was a necessary step before becoming pregnant again. Such early timing would be a patient-centred approach that reflects when women actually began the decision-making process and would support women to become informed about their options first prior to choosing which option best matches their values. It is important that patients have

quality evidence about the potential benefits and harms of health care options before considering the attributes that matter most to them, otherwise they may rely on information that is incomplete, inaccurate, biased, or not pertinent to their clinical situation.(62,173)

These findings also provide insight into the type and quality of information that women used to make their decisions for mode of birth after caesarean. Participants felt that the clinical information they received from care providers, and the decision support tools that translated information for decisions, were inadequate. A number of women desired retrospective information on their *primary* caesarean and the relationship, if any, to their options for birth *after* caesarean. What were the indications for their first surgery? Would those indications recur in their next labour and delivery? Could they have had a vaginal birth if other actions had been taken? Without such information, they drew on experiential knowledge from their caesarean experience, their perceived reasons for the caesarean, and information from peers and the Internet to choose mode of delivery. This is consistent with previous qualitative studies involving postpartum interviews with women who gave birth after caesarean in northern England which found that, in the absence of accurate, trustworthy, and complete information from their care provider, women rely heavily on knowledge from their previous birth experience(s), which are frequently characterized by feelings of unhappiness, regret, and blame, as well as fears of being physically incapable of having a vaginal birth.(25,28) While socially shared stories from friends and family provided comfort for those participants who struggled to come to terms with their unplanned caesarean delivery, personal stories about choosing birth after caesarean may bias individuals' decisions by using value-laden terms to

describe less favoured options and by presenting values and trade offs that are most important to the narrator.(218) Women in this study had questions about birth after caesarean that reflected their personal values, previous birth experiences, and social relationships. Consequently they sought information that was tailored to their specific information needs and were dissatisfied with the one-size-fits-all “pitch” on clinical risks and benefits of mode of delivery that care providers typically provided. This indicates the need for individualized decision-making for birth after caesarean, where the care provider takes time to learn what matters most to the woman and discuss her medical goals (e.g. avoiding postpartum depression) and social goals (e.g. having family present for support during postpartum recovery).

In this study, women’s attitudes toward birth after caesarean reflected their preferences for mode of delivery. Among the 15 women who had had a recent primary caesarean or were pregnant again, their preferences were split equally. Five expressed a preference for planned VBAC, which reflected their motivation to experience outcomes associated with a vaginal birth (e.g. avoiding separation from baby, experiencing a vaginal birth as a social “rite of passage” into motherhood). Five preferred planned repeat caesarean, again as a strategy to secure their desired birth outcomes (e.g. having predictability and control over the birth experience, having a set due date to allow for planning childcare for other children), and five were uncertain but leaning toward planned VBAC. Of the eight participants who were considering mode of birth after two caesareans, three preferred VBAC and four preferred repeat caesarean, consistent with their preferences for their first birth after caesarean, while

one was uncertain because her first planned VBAC had resulted in an emergent caesarean. These “clusters” of women’s preferences reflect previous findings in the qualitative literature. Black et al recently completed a meta-ethnographic synthesis of 20 papers reporting the views of 507 women from four countries.(90) Three clusters of women were identified in the literature, based on their preference for mode of delivery. Women who confidently sought VBAC were influenced by a long-standing anticipation of vaginal birth. Those who sought repeat caesarean were influenced by their previous birth experiences and encouragement from family, friends, and health professionals who recommended repeat caesarean. Women who did not have a firm preference were open to information, were influenced by professional guidance, and put effort into weighing the attributes of their birth options to assess net benefit. I observed similar findings with regard to women who were uncertain or undecided about their preference. However, in this study women who sought VBAC or repeat caesarean were influenced by different factors. All were influenced by positive and negative encouragement from family, friends, and health professionals, as well as from reading information from strangers on the Internet. All but two women expressed a long-standing anticipation of vaginal birth. Additional contextual factors worked synergistically to influence women’s preferences and their birth planning. For instance, women who had family in town to provide support during postpartum recovery found it easier to manage the uncertainty of their delivery date and the outcome of a planned VBAC.

In considering the attributes of planned VBAC versus elective repeat caesarean, participants struggled to make trade offs between maximizing the wellbeing of their baby and achieving the psychosocial attributes of childbirth that they also valued. These findings are consistent with previous qualitative studies of women's decision-making for birth after caesarean in Australia (66) and the United Kingdom (67), which indicated that women experience a tension between their desire to maximize well-being for their baby, based on the perception that elective caesarean was safest for neonates, and to have a vaginal birth, which they felt was best for themselves. This finding also echoes McClain's early qualitative work on decision-making for mode of delivery after caesarean, which found that women equally weight their social goals and perceived clinical risks, and that both social and clinical concerns were central to women's choice.(91) Conventional perspectives on decision-making for mode of birth after caesarean involve consideration of the clinical risks and benefits of delivery options – planned VBAC or planned elective repeat caesarean.(52) However, how patients and care providers conceptualize "risks and benefits" may vary depending on their attitudes and beliefs. This study and previous research illustrate that, for women, "risk" in pregnancy is multidimensional. For instance, women described the risk of emergent repeat caesarean as both emotional (e.g. experiencing loss of control and subsequent emotional trauma) and clinical (e.g. potential adverse outcomes). However clinicians tend to use a narrow definition and focus on the clinical *procedural* risks of mode of delivery, such as you have "a 30% chance of having a CS" during an attempted VBAC.(27) The way risk information is framed may influence pregnant women to avoid healthcare choices they perceive as "risky," and care

providers should be thoughtful in how they present risk information. Bayrampour, Heaman, Duncan, and Tough investigated the predictors of pregnancy risk perceptions in a convenience sample of nulliparous women in their third trimester in Winnipeg (n = 159).(107) They observed that anxiety was the strongest predictor accounting for 30% of risk perception and its effect was most prominent in older women. In my study, 9 women (39%) self-reported having postpartum depression or anxiety following their primary caesarean, and this influenced their bonding with their baby and decision-making for future delivery. It is important to identify and support these women early in their postpartum experience. This challenge in making trade-offs is an issue for many other diseases and contexts, and is not novel to maternity care, thus these findings may be relevant for other clinical decisions.

When participants in this study considered the outcomes of a planned VBAC, the small likelihood of having an intrapartum or emergent caesarean loomed larger than the high likelihood of experiencing a vaginal delivery as planned. This “loss aversion” (197) led some participants to express uncertainty about their preference for planned VBAC. Participants also experienced differences in risk framing between midwives and physicians, which may have been related to variation in professional attitudes (103) as well as geographic differences in access to resources for caesarean section and postoperative recovery.(121) A Canadian survey on the attitudes of different care provider groups conducted by Klein *et al* found that obstetricians, family physicians, and midwives as groups have varying attitudes toward safety in childbirth, with obstetricians favouring elective repeat caesarean section for women with a previous uterine scar.(70) The variation in risk framing experienced by women indicates the

need for further research into care provider groups' attitudes toward birth after caesarean, and how they frame the risks and benefits of mode of delivery, as these attitudes may influence how they approach decision-making for birth after caesarean.

8.2.2 Care Provider and Decision Makers' Narratives

Chapter 5, *Do Women Have a Choice? Care Providers' and Decision Makers' Perspectives on Barriers to Access of Health Services for Birth after a Previous Caesarean*, highlight the influence of care provider and health system factors on women's decision-making for birth after caesarean. This is the first study conducted in Canada, or a country with similar health services, exploring decision makers' attitudes toward and experience with planning services and policy for birth after caesarean. It is difficult to compare the findings of this chapter with the existing literature due to the limited number of qualitative studies on care provider attitudes toward decision-making for birth after caesarean (26,31,32,100), none of which took place in the Canadian context, and only one study from Nicaragua that included decision makers' perspectives.(100) Bryant et al.'s Australian qualitative research with care providers observed similar beliefs on informed choice decision-making: that women are entitled to make autonomous decisions about mode of birth after caesarean, that the role of the care provider is to provide guidance and information support, and that care providers have the prerogative to use the discussion of "risk factors" to limit women's choices.(26) Like their Australian counterparts, participants in our Canadian sample did not distinguish between informed choice and informed consent as two separate processes, often using the terms interchangeably.(26)

Informed choice is a model of decision-making in which the care provider gives information on clinical risks and benefits to the patient, who then makes a decision on their own. Informed consent may be the output of this decision-making; it is the principle that patients have the right to be informed of their options, to agree voluntarily to a healthcare decision, and that decision should respect the wishes of the patient. Importantly, informed choice decision-making may not include the wishes of the patient, because the information exchange is unidirectional from care provider to patient. Informed choice thus does not provide an opportunity for care providers to gain a fulsome understanding of the patient's wishes. Unlike in previous qualitative studies,(26,31,100) participants in this research unanimously expressed that they were aware of current clinical practice guidelines for VBAC and agreed with the evidence on the safety of planned VBAC. However, participants' awareness of the evidence does not indicate that they used the guidelines in actual practice, a behaviour that this study was not able to explore.

To the best of our knowledge, this is the first Canadian study to illustrate a relationship between litigation concerns and decision-making for mode of delivery after caesarean. Importantly, no participant felt that fear of litigation would cause their hospital to ban planned VBAC and concerns were minimal in the rural settings that had no in-house obstetric anesthesia. This differs from findings in the US, where VBAC services have been suspended in some facilities to minimize the risk of being sued, even in sites with 24/7 in-house obstetric anesthesia.(31,37,119) This may be due to differences in the two countries' medical

malpractice systems and/or language in their clinical practice guidelines regarding access to obstetric anesthesia.

The Canadian SOGC guidelines define timely access from “decision-to-incision” as approximately 30 minutes and they do not require surgical staff to be on site.(13) In contrast, ACOG states “that resources for emergency cesarean delivery should be ‘immediately available.’”(111) This “immediately available” clause has been identified as a key reason for escalating rates of repeat caesarean in the US. A 2012 survey of all California maternity hospitals (n=243) determined that availability of 24/7 anesthesia coverage was a predictor of VBAC services.(37) Among hospitals that stopped providing VBAC services in the previous ten years, the most commonly cited reasons were lack of immediate available anesthesia (70.7%) or obstetrician (54.5%), ACOG guidelines (48.5%), and/or hospital protocols (44.4%).(37) In spite of these trends, the strength of evidence is weak regarding the appropriate response time from indication of uterine rupture to caesarean section. The best available literature consists of two case series conducted in tertiary hospitals with in-house anaesthesia and obstetrics, which showed no significant association between response time and perinatal outcomes.(219,220) There is no evidence from settings with off-site surgical teams. Given the influence of surgical and anaesthesia services on care provider attitudes and malpractice concerns, there is a pressing need for high quality research on the safety of planned VBAC in settings with in-house vs. off-site surgical teams.

Previous studies have observed that care providers may find it personally convenient and financially lucrative to plan elective repeat caesarean and promote it with their patients

(31,100), however this did not emerge as a theme in the study. This is likely because Canadian obstetricians, family physicians, and midwives receive a similar fee for service regardless of whether they attend a labour or a caesarean. This financial context, where there is no monetary incentive to perform a caesarean, is similar to that observed in California health management organizations where physicians are salaried or receive a flat rate regardless of mode of delivery. (19,132,133) Previous literature has identified time as a barrier to exchanging information and engaging in shared decision-making,(42) however time constraints were not perceived to be a barrier for birth after caesarean decisions due to the number of visits that occur in a woman's childbearing pathway. Similarly, care providers felt motivated to engage with patients in iterative discussions about birth after caesarean options.

Nonetheless care providers faced a number of challenges when counseling women about choosing mode of delivery. These included communicating the health services (clinical, legal, operational) risks and real-world consequences of uterine rupture without discouraging the woman from considering planned VBAC; ensuring the woman receives accurate and consistent information as she meets different care providers during her childbearing journey; and identifying women who experienced a traumatic first birth and providing them with appropriate support. Findings also highlighted that care providers did not routinely discuss the non-medical features of the decision that may be important to the woman, such as fear of labour, caring for older children, or a desire to experience a vaginal delivery after a previous "failed" attempt. Findings from international narrative reviews of qualitative studies on women's experiences of choosing mode of delivery indicate that women's preferences for birth

after caesarean are highly individual, depend on both medical and non-medical factors, and largely depend on their first birth experience.(24,221) Care providers could benefit from strategies to help their patients clarify and communicate which outcomes are most important to them, and incorporate those considerations into the decision-making process.

A number of recent publications have commented on the potential of shared decision-making (SDM) for maternity care in general (30,222) and birth after caesarean in particular.(223) Drawing on Légaré *et al's* model, the steps in SDM for birth after caesarean would include the following: the woman and her care provider consider the best available evidence on the clinical risks and benefits of planned VBAC vs. elective repeat caesarean and highlight areas where knowledge is uncertain; take time to consider the woman's values and both the medical and non-medical outcomes that are most important to her; reach a consensus about mode of delivery, including input from other members of the care team and family as appropriate; and have shared responsibility for the decision.(184) SDM has the potential to enhance informed consent for preference-sensitive choices like birth after caesarean, as failing to diagnose patient preferences may put care providers at higher risk of litigation.(105) Unlike informed consent for mode of delivery, which typically occurs in the third trimester of the next pregnancy, SDM may begin as early as the postpartum period following the woman's primary caesarean to reflect the actual timing of when women begin deliberation and preference formation. Importantly, analysis of narratives revealed that care providers engaged in components of SDM, with midwives and rural consultant obstetricians illustrating the most

examples of listening to and incorporating women's knowledge and preferences in decision-making. However there is room for improvement.

8.2.3 Complex Adaptive Systems Analysis

Chapter 6, *Patient, Care Provider, and Decision Makers' Perceptions of Barriers to Implementation of Shared Decision-Making for Birth after Caesarean: A Complex Adaptive Systems Perspective*, synthesized the findings of participants' narratives to provide a holistic picture of the context that influences decision-making for patients, care providers, and decision makers in five BC communities. By using a novel conceptual framework, complex adaptive systems theory, I provided a rich description of how decision-making for birth after caesarean is influenced by a complex array of factors and the relationships between them. I demonstrated how use of CAS theory helps to understand challenges to implementation of SDM. This understanding can assist in the development of SDM tools and interventions that are tailored to the context in which they are used, increasing their likelihood of successful implementation.

Women's experience of birth trauma and early preference formation for mode of delivery, were unexpected and novel barriers to SDM. Decision makers in this study expressed attitudes and experiences consistent with those of care providers interviewed, yet their perspective illuminated the relationships and interactions between these micro, meso, and macro levels of the complex system. For instance, care provider participants in larger hospitals had patient safety concerns about access to caesarean section in the event of a uterine rupture. The reasons for these shortages emerged through interviews with health service decision

makers, who provided descriptions of local nursing and anaesthesia shortages and competing access to the operating room with other specialties. Health service decision makers also revealed that the access challenges began upstream with a limited budget and strategic policy priorities that did not include maternity care. In one region, recent malpractice suits related to decision-making for caesarean had been covered in the local media. This encouraged physicians in the region to discuss the health services risks of limited access to surgery during informed consent for birth after caesarean.

Two previous systematic reviews have explored the knowledge to action gap from the perspectives of health care professionals (147) and patients.(185) Légaré et al's systematic review of 38 studies exploring health professionals' perceptions of barriers and facilitators to SDM determined that the most frequently perceived barriers were time constraints (e.g. short clinic visits) and perceptions that SDM was not applicable to the characteristics of the patient population or the clinical situation.(147) SDM was facilitated primarily by the motivation of health professionals, and the belief that SDM would lead to better patient outcomes and improved health care processes.(147) Six of the 38 studies were conducted in Canada and one study, conducted in Wales, was on decision-making in maternity care.

Similar enablers to SDM for birth after caesarean were present in participants' narratives for this thesis. On the whole, care providers were motivated to provide women information, listen to their preferences, and support them to make a choice. These narratives were most common amongst the individual obstetricians who held long 'informed consent' appointments in the third trimester and in narratives from midwives across all settings.

Midwives in particular expressed the belief that the attributes of SDM led to better outcomes and health processes for women choosing mode of birth after caesarean decision-making.

Surprisingly, none of the key barriers observed in Légaré et al's review emerged in care providers' narratives in this study. Care providers perceived that time constraints were not a barrier to SDM. While individual clinic visits may be short, participants felt that there were enough appointments over the course of pregnancy in which to engage in SDM. All providers felt that SDM was ideal for maternity patients considering birth after caesarean and that most patients expected to be highly involved in the decision if not solely responsible for it. A number of participants mentioned that they sometimes observe that new immigrants from different cultural backgrounds express surprise and discomfort when invited to take part in childbirth decision-making. These care providers felt it was important for them to encourage and support women to be active participants in their delivery choices.

The primary barrier that emerged from care providers' narratives was lack of access to surgical and anaesthesia services to support both modes of delivery after caesarean. In Légaré et al's review, this barrier was defined as "inadequate access to actual or alternative health care services to put SDM into practice"(147) and was observed in only three of 38 included studies, but the publication does not indicate which studies reported this barrier. In the review, 'access to services' was derived from a taxonomy of barriers and facilitators to implementing clinical practice guidelines in actual practice that had been used to study general practitioners' decisions about plain radiography for back pain.(224) In that original study, increased access to CT services and private radiology was said to modify general practitioners' views of the

appropriateness of practice guidelines.(224) In this study, decreased access to surgical and anaesthesia services modified the attitudes of care providers in large settings regarding the safety of planned VBAC.

The role of access to health services (e.g. anaesthesia and surgical services) on implementation of SDM emerged from the dynamic interaction of patient safety concerns, litigation, and resource constraints, which perhaps are unique to decision-making for birth after caesarean and to the settings in this study. In previous work investigating implementation of evidence-based leaflets designed to encourage SDM in maternity care, Stapleton and colleagues found through qualitative interviews that health professionals framed the risks of childbirth interventions in a way that was biased toward technological options that would protect them against litigation, like elective repeat caesarean, but this was not expressly related to lack of access to surgical resources.(35)

When examined in isolation, these discrete barriers and facilitators provide narrow perspectives on the phenomenon of decision-making for birth after caesarean. Without interviewing decision maker stakeholders, I would not have understood fully what motivated care providers' risk communication approaches, or why, after engaging in informed consent and learning about these risks, women questioned the safety of planned VBAC. However, by looking at the relationships between these factors the picture becomes clear. Clarity about the challenges to implementation of SDM for birth after caesarean were achieved through this systems perspective. This speaks to the value of in-depth qualitative research to explore implementation problems. Another strength of my method was in interviewing a range of

stakeholders who have an effect on or are effected by decision-making for birth after caesarean, and comparing their narratives to gain a multifaceted interpretation of the factors and relationships that influence implementation of SDM.

My grounded theory analysis and use of CAS theory also revealed the “recurrent diachronic” nature of women’s decision-making, which has not been identified as a factor that influences SDM for birth after caesarean in previous literature. That is, women who have an unplanned caesarean go over and over the trauma of the first birth in a cyclical fashion. In women’s reproductive decision-making from pregnancy to pregnancy, the decision for the first mode of delivery influences the decision for the next birth and the next and so on. While SDM is typically perceived to be a process that begins within a healthcare encounter, it is clear from this study, though, that women start to make a choice long before they enter the healthcare system. Rees et al. conducted interviews with health care professionals regarding barriers and facilitators to implementation of decision aids for birth after caesarean, prior to a randomized controlled trial of the tool.(225) In that study, participants felt that the decision aid should be introduced to women as early in pregnancy as possible (e.g. 12 week booking visit), however the findings did not suggest that women engaged in any decision-making activities during their inter-pregnancy interval.(225) This present study, in contrast, illustrates that not only does SDM begin for women while they are not actively engaged as a maternity patient, but also their choices involve overlapping spheres of influence – social relationships, family obligations, and values regarding vaginal birth. In order to develop interventions that meet women’s decision-

making needs, it is important to attend to the CAS characteristics of the healthcare system and overlapping spheres of influence.

8.3 Practice Implications

How then can this locally derived knowledge of decision-making for birth after caesarean be used to support patients, care providers, and policy makers in implementing SDM for birth after caesarean? I demonstrate how a whole system perspective takes into account temporal, legal, environmental, and interprofessional barriers to implementation of SDM for birth after caesarean. SDM interventions may begin when women actually begin to form preferences after their primary caesarean and could include a debriefing in the immediate postpartum to help women understand the reasons for their first caesarean and affirm their eligibility for planned VBAC before they leave the healthcare system. Care providers may also discuss a woman's perspective on the non-medical factors important to her reproductive decision-making. As emphasized throughout the dissertation, discussion of patient preferences is a necessary step in informed consent, may protect against litigation, ensures that women choose the option that matches their preferences, and is a core component of patient-centred care.

At the clinician level, care providers' narratives exhibited components of SDM to support women's choices for birth after caesarean, which is a positive finding. This included providing information on clinical risks and benefits of the options, inviting women to consider what matters most to them, and supporting them to make a decision. However their SDM process could be refined further through more balanced and comprehensive risk information

that includes both health services and social risks, providing information before clarifying values, listening to the woman's values and lifestyle preferences, and asking women their preferred role in decision-making. The conventional solution to optimize care providers' decision-making approaches and implement SDM is to offer care providers SDM skills training. One Canadian randomized controlled trial has tested the effect of a multifaceted intervention to support implementation of SDM among nurses.(226) This trial involved nurses in a provincial telephone triage system, and intervention included the distribution of patient decision aids, an educational meeting, and performance audit with feedback. Compared with usual care, nurses in the intervention group had better knowledge (74 vs. 60%, $P=0.007$) and decision coaching skills (81 vs. 44%, $P=0.001$), particularly in assessing decisional needs (information, values clarity, support, stage and timing of decision) and addressing support issues.(226) The study's findings have been integrated across the nursing curriculum at the University of Ottawa.(227) My study suggests that care providers might also benefit from learning how SDM can enhance the legal informed consent process particularly in settings with concern about limited access to surgical resources.(105) In order to support the successful implementation of SDM skills in routine practice, it is necessary to also consider the context of limited resources that influences care providers' decision-making and causes them to focus on outcomes related to the rare outcome of uterine rupture.

Introducing tools to support SDM, such as patient decision aids and preference reports, may help care providers to refine their current approach and enhance consistency of information exchange within care teams. *Patient decision aids* are tools that describe the

decision to be made, provide information about options, help patients clarify their values, and may include consideration of both health services and social risks and benefits.(43,44) A *preference report* summarizes the patient's decision aid results (e.g. knowledge, values, preferred choice, decisional conflict, and comments or questions), as well as the patient's clinical assessment findings.(228) These tools can guide discussion between the patient and her care team about the options that are available based on her individual clinical profile and local resources. A systematic review of implementation of SDM tools suggests that their use in routine practice may be facilitated by gaining care provider trust in the content of the tool, including both its evidence base and reflection of "local" data and clinical realities.(149) Findings from this study indicate that interventions to support SDM for birth after caesarean must be embedded in a systems approach and consider patient, care provider, health resource, environmental, and policy barriers and enablers to access of planned VBAC. A systems approach to supporting SDM may include enhancing access to anaesthesia where population size and need warrant the service, as well as identifying and providing mental health support to women who experience birth trauma.

Future PtDA interventions to support women's choice of birth after caesarean may also support information exchange about the primary caesarean – care providers should offer full information about the reasons for women's primary caesarean, and women should in turn describe their birth experience. Such "de-briefing" would also provide an opportunity for clinicians to identify and provide support to women who have experienced trauma. Resources to support women's decision-making between pregnancies should provide more than accurate

information on the risks and benefits of VBAC versus elective caesarean, with attention to which risks are included and how risk estimates are framed. They should also include individualized information on the social attributes that are essential to each woman's decision, such as remaining in physical contact with their baby throughout the immediate postpartum, caring for children while recovering from childbirth in the postpartum, and addressing postpartum depression and anxiety. Such resources may also be tailored to address local resources so that women have an accurate understanding of their access to post-surgical rooming together and midwifery care.

The format and dissemination of these resources should be considered in the format that women prefer, which in this study included face-to-face discussion with their care provider, conversation with peers, and the Internet. They should also be designed to attend to the various health system and policy factors that may stop a woman from having the birth she desires, such as lack of anaesthesia resources to support planned VBAC or a biased discussion of risks and benefits that promotes elective repeat caesarean. As previously discussed, PtDA interventions designed for use outside of a clinic visit or in the comfort of the woman's home are highly effective in helping women to make an informed choice for birth after caesarean.(38,81) However, these choices change between exposure to a decision aid and actual delivery. Evidence from this study adds to the literature suggesting that women's informed choices may be circumvented or overridden by the advice of care providers, their health service environment, and informed consent protocols that frame planned VBAC as an unsafe mode of delivery.

At an organization and policy level, decisions around allocating resources to surgical specialties other than obstetrics have a profound influence on care providers' concerns about providing women safe access to the OR, which in turn influences clinical decision-making. It is difficult to envision a solution to resource shortages during a time of fiscal constraint; however, acknowledging that challenges to SDM for birth after caesarean exist at the resources and policy level, as well as among patients and care providers, can encourage generative discussions among stakeholders at different levels of the system. In such an approach, implementation of SDM would include goals and objectives that cut across different levels of the system. A holistic approach to implementation of SDM for birth after caesarean might include taking a single barrier and exploring actionable solutions to address it at patient (micro), organizational (meso), and policy (macro) levels of the system.

The successful models of planned VBAC health services in the small rural communities in this study may be scaled up for larger communities. The two small communities in this study perceived that their success was due in part to these key factors: the presence of an obstetrician champion who promoted normal, vaginal delivery; communication during a planned VBAC between on-site labour and delivery staff and off-site (on-call) surgical and anaesthesia staff; and comfort in practicing in a low-resource hospital setting with no in-house anaesthesia. These characteristics are likely present in other rural and urban settings; however the small size of rural and remote maternity services makes it easier to see the component parts of the complex health care system and the relationships between them. These characteristics may be identified

in other settings and harnessed to promote planned VBAC and women's informed choice of mode of delivery.

8.4 Limitations

Some limitations of this study may be noted. The study was set in a single province, British Columbia, which may limit the transferability of findings to jurisdictions with different population demographics and density, and models of maternity health services and remuneration. The findings likely need to be adapted and refined for different contexts. Participants were primarily Caucasian and well educated, which was the result of having limited resources for sampling. Similarly, due to funding constraints, all interviews were conducted in English, which limited my ability to investigate cultural differences in decision-making, particularly among women. The sampling frame also excluded communities with no local access to caesarean section, because the SOGC clinical practice guidelines do not recommend birth after caesarean in such settings. Investigation of the phenomenon in such communities would provide insights on the decision-making process of women who must travel to access birth after caesarean services in a different community. Care provider and decision maker participants in the study communities expressed unanimous support for SOGC clinical practice guidelines and the evidence on the safety of planned VBAC. I attempted to minimize the potential for self-selection bias through purposeful sampling to include communities with both high and low repeat caesarean rates and participants with a range of perspectives, including those who

oppose planned VBAC. However, the perspectives of participants may not reflect stakeholder attitudes in other communities with high caesarean rates.

My findings on women's preference formation for birth after caesarean indicate the importance of time – women's delivery preferences change between pregnancies, shift in response to new experiences and information, and become more certain as women approach their estimated due date. I conducted interviews with women at one time point in their childbearing experience, thus the differences observed between participants' attitudes may have been a reflection of the point in time that I interviewed each during her decision-making process. To minimize the effects of this limitation, I asked participants to reflect on their previous mode of birth decision-making experiences, and to discuss changes in their attitudes and what triggered those changes. I also sampled for women who were at different time points in their decision-making journey, including women who recently gave birth by primary caesarean, who were pregnant and considering mode of birth after caesarean, and who had made an actual choice and recently gave birth after caesarean.

Future studies may engage purposive sampling strategies and community outreach recruitment in order to explore the attitudes and experiences of women from different socio-cultural backgrounds, women who choose not to have more children after a primary caesarean, and from communities with no local caesarean section. Finally, it is possible that stakeholders with important knowledge on the subject of birth after caesarean were not involved as knowledge partners in primary data collection and knowledge exchange. A formal stakeholder

analysis² may have been valuable for identifying all stakeholders, their influence, and relationships.

8.5 Implications for Future Research

Future studies should explore the key findings emerging from this grounded theory analysis, to determine if the contextual factors that influence birth after caesarean decisions are observable in other settings and among different populations. Studies might explore how access to resources influences implementation of SDM for birth after caesarean in other hospitals, and for other childbirth decisions, such as prenatal genetic screening, place of birth, and type of care provider. More research is needed also on the timing of women's preference formation and actual choice for birth after caesarean, to determine when is the optimal time to intervene. This study suggested that women would benefit from decision-making support as early as the first six weeks postpartum. Research may also investigate further the characteristics of women who feel certain about their decision compared to those who feel uncertain. Public health nurses who encounter women during their inter-pregnancy interval may be stakeholders in the process of decision-making for birth after caesarean. Other care providers who comprise the interprofessional care team, but do not directly support women in making mode of delivery

² Stakeholder analysis is an approach involving qualitative or quantitative methods to generate knowledge about individuals and organizations. It seeks to understand stakeholder behaviour and interests and to assess the influence they have on decision-making or implementation processes. The results of analysis may include identifying opportunities to mobilize stakeholder support.(229)

decisions, may have insight into additional factors that influence the complex health care system (e.g. pediatricians, family physicians who do not provide intrapartum care, and nurse practitioners). These other care provider stakeholders should be included in participant sampling for future studies and as knowledge partners in the research process.

There is also potential for more research on the knowledge translation theories used in this study to explore how stakeholders feel about the knowledge exchange process, and to determine the outcomes of knowledge exchange activities. Do they lead to more successful implementation? How satisfied are knowledge partners with the process? What are the characteristics of successful integrated knowledge translation partnerships? I demonstrated in Chapter 7 how partnering with stakeholders and working with them to co-develop solutions ensured that actionable next steps would be grounded in the scientific literature on effective interventions, but as importantly, would be feasible to implement in their local context. Future studies on implementation of SDM may adopt a similar process characterized by open, non-hierarchical dialogue amongst stakeholders, and collective rather than individual responsibility for identifying, developing, and implementing SDM interventions.

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Appendices

Appendix A Interview Guides

A.1 Interview Guide with Women

Initial Open-Ended Questions

1. Tell me briefly about your labour and delivery experiences.
 - What was the reason for your caesarean? Did you talk about the reason with anyone after the birth? Describe those conversations.
 - What did you want your birth to look like? To feel like? What was the most important thing about your birth?
2. What did you plan for your birth(s) after caesarean – a planned VBAC or an elective caesarean?
 - Do you feel capable of having a labour and vaginal delivery? Why/why not?
 - Do you feel it's possible for you to have a vaginal birth? Why/why not?
3. What would help you feel like you're in control of your delivery?
4. Tell me how you made the decision to have a VBAC/repeat caesarean.
 - Was it a difficult choice? What did you like most/least about making the decision?
 - What was the most important thing in your decision?
5. Tell me about your care provider's role in making the decision.
 - Who do you think should make the final decision?
 - Who else, if anyone, influenced your decision?
 - Tell me about how he/she/they influenced you.
 - How did you feel when the care provider said that?
6. What information did you use to help make your decision?
 - How much did you trust those resources/people?
 - Did they change your opinion?
7. Were you told about any hospital barriers to having a VBAC?
8. What was most helpful to you in making your decision?
 - [Probe about a person, an organization, a resource]
9. How did you feel about your decision when you made it?
 - Did you feel certain?
 - How do you feel about your decision now?
 - Is the reason for your primary caesarean a part of your decision-making?
 - How important is it to your choice of VBAC or CS?

Intermediate Questions

1. Tell me your thoughts and feelings about vaginal birth and caesarean section.
2. What is good/bad about choosing a planned VBAC?

- What is good/bad about choosing a planned caesarean?
3. What is easy/hard about choosing a planned VBAC?
 - What is easy/hard about choosing a planned caesarean?
 4. What is risky/safe about a planned VBAC?
 - What is risky/safe about a planned caesarean?
 5. Did you feel that both VBAC and repeat caesarean were options for you?
 - If no, why not? How did this impact your decision?

Ending Questions

1. Have your thoughts and feelings about vaginal birth and caesarean section changed over time?
2. After having your experience, what advice would you give to someone who is choosing between planned VBAC and caesarean?
3. If you could wave a magic wand and change the health system, what would it look like for women who are giving birth after caesarean?
4. Is there anything that you might not have thought about before that occurred to you during this interview?
5. Is there anything else you think I should know to better understand how women make the decision between VBAC and caesarean?
6. Is there anything you would like to ask me?

A.2 Interview Guide with Care Providers

Initial Questions

1. Tell me your thoughts and feelings about planned VBAC and elective repeat caesarean.
2. What is good/bad about choosing a planned VBAC? What is good/bad about choosing an elective repeat caesarean?
3. What is easy/hard about choosing a planned VBAC? What is easy/hard about choosing an elective repeat caesarean?
4. What is risky/safe about a planned VBAC? What is risky/safe about an elective repeat caesarean?

Intermediate Questions

1. Could you describe a typical conversation or series of conversations with a patient about choosing mode of delivery after caesarean?
2. Tell me about your role in helping patients make the decision for birth after caesarean.
 - How much influence do you think you have on the decision-making process? Who else, if anyone, participates in the decision? Tell me about how he/she/they influences the decision.
3. What information do you use to help patients make the choice between planned VBAC and elective caesarean?

4. What information do you think your patients feel is most important?
5. What do you like most/least about helping patients choose how to give birth after caesarean?
6. Do you and your patients ever disagree about a plan for mode of delivery after caesarean? Tell me what happens if you disagree.
7. How do you describe the risks and benefits?
 - Probes: What do you mean by “very rare”? Why do you use narrative statements rather than statistics?
8. Do you feel you have enough time to hear what matters most to patients? How important are the patient’s preferences to the decision?
 - Probe: What would need to change in order for you to have more time to hear these preferences from the patient?
9. Do you feel like it’s easy to incorporate the patient’s preferences into the decision for VBAC or ERCS?

Intermediate Questions: Health System Experiences

1. Do you think there are any barriers to having VBAC births in your practice? If yes, what are they?
 - Probes: How do your colleagues feel about VBAC?
2. What resources and staff are available to support VBAC for your patients?
 - Probes: Anesthesia; Consulting obstetrician; Fetal surveillance
3. Could you describe the VBAC policies within your college, hospital, and health authority? How do they affect your practice?
 - Probes: SOGC VBAC guidelines; hospital protocols; home birth protocols
4. Have you experienced any health service or policy changes related to VBAC within your college, hospital, or health authority?
 - Tell me about [insert policy or change]? How did it affect your practice?
5. Do you feel that both VBAC and repeat caesarean are options you can offer to eligible patients? If no, why not?
 - Probe: What needs to change in order to make VBAC an option you can offer to eligible patients?
6. What organizational changes would help you to offer VBAC to patients?
 - Hospital resources
 - Policies
 - Time with patient, information
 - Financial costs
 - Malpractice risks
 - Patient expectations/preferences
7. Who is responsible for making organizational changes?
 - Who are the obstetric champions or leaders in your area?
 - Are managers interested in decreasing the repeat CS rate? Are other champions interested? Are your colleagues?

Ending Questions

1. Have your thoughts and feelings about vaginal birth and caesarean section changed over time?
2. If you could wave a magic wand and change the health system, what would it look like for women who are giving birth after caesarean?
3. Is there anything that you might not have thought about before that occurred to you during this interview?
4. Is there anything else you think I should know to better understand how women make the decision between VBAC and caesarean?
5. Is there anything you would like to ask me?

A.3 Interview Guide with Decision Makers

Initial Open-Ended Questions

1. As a decision maker, what are your thoughts on the repeat caesarean section rate in [insert organization]?
2. How much of a priority is the repeat caesarean section rate for [insert organization]? Could you describe your current maternity care priorities as a decision maker?
3. Do you think there are any barriers to having VBAC births in [insert organization]? If yes, what are they?
4. Could you describe the VBAC policies within [insert organization]? How do they affect the care provided to women?
 - Are you familiar with the SOGC VBAC guidelines? Do you feel the guidelines are adequate? How do you use them in your practice?
 - What do the VBAC policies look like at other hospitals, either here in [organization] or other places you've practiced?
 - Would you be comfortable supporting a VBAC if the OB or Anesthesia were not in house, but on call? Tell me your thoughts on having them on call, not in house?
 - What about fetal monitoring in labour. Tell me your thoughts on what is most appropriate?
 - What are your thoughts on VBACs laboring at home? VBAC home birth?
5. Have you experienced any health service or policy changes related to VBAC within [insert organization]?
 - Tell me about [insert policy or change]?
 - How did it affect services for women?
 - How were patients/providers involved in making the change?
6. Do you feel that both VBAC and repeat caesarean are options that [insert organization] can offer to eligible patients?
 - If no, why not?

- What needs to change in order to make VBAC an option that [insert organization] can offer to eligible patients?
7. What organizational changes would help you to offer VBAC to patients?
 - Hospital resources
 - Policies
 - Time with patient, information
 - Financial costs
 - Malpractice risks
 - Patient expectations/preferences
 8. Leadership – Who is responsible for making organizational changes? Who are the obstetric champions or leaders in your area?
 - Are managers interested in decreasing the repeat CS rate? Are other champions interested? Are your colleagues?

Intermediate Questions

1. From a decision makers' perspective, what is good/bad about a planned VBAC? What is good/bad about a planned caesarean?
2. What is risky/safe about a planned VBAC? What is risky/safe about a planned caesarean?
3. How do you think care providers in [insert organization] feel about VBAC?
4. What resources and staff are available in [insert organization] to support VBAC for patients?
5. What information or resources does [insert organization] provide to help patients make decisions between planned VBAC and elective caesarean? [Probe: Organization website, Power to Push]

Ending Questions

1. If you could wave a magic wand and change the health system, what would it look like for women who are giving birth after caesarean?
2. Is there anything that you might not have thought about before that occurred to you during this interview?
3. Is there anything else you think I should know to better understand VBAC and repeat caesarean section in [insert organization]?
4. Is there anything you would like to ask me?

Appendix B Code Books

B.1 Initial Code Book

Domain	Code	Subcode
Region	Northern	
	Fraser	
Role	Woman	Midwifery care
		Family doctor care
		OB care
	Care provider	Midwife
		Family Doctor
		GP Surgeon
		Obstetrician
		Anesthetist
		Nurse
	Decision maker	Hospital
		Regional
		Provincial
Planning for birth /1st /BAC	Preparing oneself	Mentally
		Physically
	Becoming informed / Needing information	Types of knowledge (i.e. books, Internet)
		“Doing research”
		Wanting personalized information
		As a way to make desired birth happen
		Qualities of an informed choice
		Receiving new/useless information
		What a planned VBAC looks like
	Negotiating challenges	Becoming sick/higher risk
		Hearing horror stories
		Caring for a toddler
		Having work/finance challenges
	Making a birth plan; or not	Not wanting to think about it
	Clarifying values (i.e. what matters most to me)	Vaginal/drug-free birth
		Baby’s health
		Emotional health

		Having more kids
		Changing values after birth
		"I always knew"
		Emphasizing social values/norms (i.e. role of birth stories)
	Doing things differently	Changing place of birth
		Choosing midwifery care
		Avoiding first-time mistakes
		Picturing the ideal birth
		"Being more connected to the experience"
		Getting postpartum help
		Having knowledge now (i.e. "I know now" "It's real now")
		Having a back up plan
	Considering mode of delivery	Discussing options; or not
		Forming a preference
		Anticipating/considering different outcomes
		Considering reasons for first CS
		When did planning begin
	Identifying gaps in knowledge	Having unresolved questions from first birth
	Recognizing fear/anxiety	Being scared of the unknown
	Debriefing first birth; or not	
	Prenatal classes	
Attitudes toward birth	Vaginal birth as normal/natural (i.e. normative; CS as not)	Fear of planned VBAC ending in CS
		VBAC is a "non-issue" [CP]
		"Once a CS, always a CS"
	Risks and benefits	Of CS
		Of VBAC
		Of home birth
		Risk to baby
	Assumptions about women's preferences [CP]	Women are "too posh to push"
		Women react to bad births
	Differences in [CP]	By culture
		By geographic location
	Enjoying maternity care [CP]	
Risk of pelvic floor disorders [CP]		

Having a vaginal birth	Questioning one's ability	By others
		By self
		Feeling less of a woman
	Gaining confidence in	By proxy (i.e. "people believe that it was possible")
	Becoming motivated	
First birth experience	Onset of labour	Induced; or not
		PROM
	Achieving progress; or not	
	Remembering sensations	Pain
		Feeling exhausted (i.e. "no energy")
		Feeling shame
		Feeling fear/anxiety
	Noting passage of time	Transferring to hospital
		Being "on the clock"
	Turning point	Being presented with options
		Giving up
	Emergency CS; or not	
	Experiencing failure	Comparing to other women
		Feeling responsible for harming one's baby
"Going over" the experience	Questioning choices ("If I hadn't had X then..."; "I didn't need X..." "If I had known")	
	Reassessing information	
	Regretting action/inaction	
Shifting agency in labour and PP	Losing/being out of control (i.e. "all over the place", "you can't think anymore")	
	Feeling others are in control	Getting permission
		Feeling like a victim
		Losing dignity
	Being in control	
	Regaining control	
	Wanting to have control	
	Labouring together (i.e. "we")	
	Holding oneself responsible (i.e. Not speaking up, "What did I do wrong?")	
	Relying on partner	
Listening to one's instincts; or not		

	Becoming a “VBAC candidate”; or not	
Having the caesarean	Being told the purpose of	Avoiding death
		To have a healthy baby
	Costs of	Being “messed up”
		Losing out on immediate bonding
		“Taking the romance out of it”
		Taking longer to breastfeed
		(General anaesthesia)
	Remembering the birth	
	Mourning loss of vaginal birth	
Being told to “be happy”		
Feeling unprepared for	Taking away plans	
Postpartum experience	Being immediately separated (“that magic hour”)	Feeling paralyzed/trapped
		Feeling alone
		Feeling unimportant
		Feeling anxious about baby
	Remembering sensations	Pain
		Feeling gross/unclean
	Turning point (i.e. from negative to positive, grief to acceptance)	Being reunited with baby
		Breastfeeding
		Identifying “consolation prizes”
	Becoming a mother (i.e. rite of passage)	Joining the “club”; or not
		By breastfeeding
	Recovering physically	Figuring it out on your own
Experiencing “redemption”		
Experiencing depression/anxiety		
Intervention	Strategies for avoiding	Having a birth plan
		Having midwives
		Accepting smaller interventions
		Checking with partner
	Costs of	Pain
		Caesarean
		Impact on baby (i.e. “stoned,” cut, low Apgars)
Cascading/snowballing		
Failure of		

	Desire for	(Not being listened to)
	Induction/augmentation	
	Pain relief (i.e. epidural, morphine)	
	As a useful tool	
Hospitals and Health Services	Following protocols	
	Lacking privacy	Being surrounded by CP's
		Listening to other women
	Getting to the hospital	Travel time
	Transferring care between	
	Having limited access to midwives	
	Keeping mums and babies together [CP]	Consumer demand for [CP]
	Perceptions of size/isolation [CP]	
Restructuring the organization [DM]		
Model of care [CP, DM]	History in the community	Turnover of care providers
		Changing attitudes
		Experiencing bad outcomes; or not (i.e. impact on CP; effect on nurses in particular)
		Recognizing population vulnerability
	Establishing group prenatal clinic	Reasons for new model (i.e. sustaining local birth, retirement, continuity of care)
		Characteristics of model
	For birth after caesarean	"Designating" patients' risk status
		Being vigilant (i.e. "Having the antenna up")
		Being cautious [DM]
		Managing short interpregnancy interval
		Fear of damaging the baby
		Offering VBAC if ECS patient presents in labour
	Managing "timely access" to CS	Perceiving no issues with access
		Comparing urgent/non-urgent CS
Being risk tolerant; or not		

	Length of time to access
	Competing with other services
	Not having dedicated anesthesia
	Not having enough nurses
	Impact on CS rates [DM]
Relationships between care providers	Communicating
	Providing competing information to women
	Confusion of roles
	Getting permission from OB
	Receiving patients from other communities
Enhancing the model of care (i.e. magic wand)	Resources for in-house CS and anesthesia
	Having a staffed nursery
	Having staffed postpartum recovery ward
Catalyzing change	Making change at a systems level
	Feeling nothing needs to change
	“Nothing changes until something happens”
	Feeling politically powerless
	Prioritizing patient safety
	Respecting the patient (i.e. patient advocates, debriefing)
	Existing QI efforts/goals (i.e. increasing vaginal birth rate)
Educating care providers [DM]	Lack of physician motivation
	MoreOB
Following evidence/protocols/guidelines	Expressing uncertainty about
	Assessing the science behind (i.e. intention to treat)
Managing medico-legal risks	Having informed discussion with patient
	Using a consent form
	Sending patient to an OB consult
Community’s perspectives on	
Role of local champions	
Local outcomes/statistics	

	Providing continuity of care	
	Juggling full scope practice	
	Financial concerns; lack of	
Care providers	Making decisions with	
	Relationships with	Trusting (i.e. feeling “on side”, “family”)
		Feeling scared
		Seeing consultants
		Being transferred around
	Communicating with	Feeling dismissed
		Getting good info
		Receiving info “in passing”
		Getting (in)consistent info
		Feeling pressured; not
		Disclosing risks/warnings
		Feeling “out of the loop”, not informed
		Disclosing information to the care provider; or not
	Characteristics of care	Getting care that matches values; or not
		Getting inconsistent/no care
		Asking questions
		1 to 1 care
		Woman centred care
		Authoritarian
	Getting the VBAC “spiel”; or not	Waiting between births
Emphasizing risks (i.e. “be careful”)		
Who gave the advice		
Receiving additional info		
	Assessing the quality of the info	
Questioning care providers’ abilities		
Trusting care provider’s authority		
Making assumptions about what women want [CP]		
Communicating with women [CP]	Characteristics of	Questioning women’s state of mind immediately postpartum
		Listening to the patient
		Persuading the patient; or not
		Perceiving patients are satisfied

		(i.e. Women “accept it” recommendations)
		Importance of women’s motivation
		Importance of patient “keeping an open mind”
	Giving a “spiel”	Timing of the BAC discussion (i.e. at first visit, after decision made)
		Describing minimum standards of care
		Emphasizing risks
		Tailoring it to the patient
		“It’s a secret domain” [DM]
	Using additional info/tools; or not	As a proxy for real conversation
		Telling patients to be critical of the source
	What makes a “good” decision	Having a moral responsibility to share information
		Quality of conversation
		Culturally-sensitive [DM]
	Debriefing first birth	
	Deferring to the OB	
Making decisions	Characteristics of choice	Lacking options
		Illusion of informed choice
		Feeling “guilted” into choice
		Exercising autonomy; or not
		Accepting the decision
	Type of decision maker	
	Becoming confident in	
	Playing the “what if” game	
	Having an internal dialogue	
	Having a dialogue with others	
	Preference for participation in	Provider’s choice
		Informed (patient) choice
		Shared decision
	Weighting the risks and benefits	Mum vs. baby (cognitive dissonance)
		Calculating what is best for baby
		Anticipating the good/bad outcome
	Learning from others; or not	Comparing birth stories/values
		Making inferences
		Evaluating credibility of stories

		Influencing other moms
	Thinking irrationally	Confirming one's beliefs
		Expressing certainty
		Avoiding bad outcomes (losses)
		Judging events by their outcome
		Relying on one trait/fact
		Judging action as worse than inaction
		Overestimating risks
		Recalling only negative memories
		Avoiding ambiguity
		Seeing past outcomes as predictable; "I knew it all along"
		Reacting to disconfirming evidence
		Overestimating negative outcomes
		Choosing the status quo
		Motivated reasoning
What participant wants to get out of this study		

B.2 Revised Code Book

	Code	Subcode	Description
1	Region	FH	Fraser Health
		NH	Northern Health
2	Woman	FPC	Family physician care
		MWC	Midwifery care
		OBC	OB care
3	CP (i.e. care provider)	Anes	Anesthetist
		FP	Family physician
		GPS	GP Surgeon
		MW	Midwife
		Nurse	Nurse
		OB	Obstetrician
4	DM (i.e. decision maker)	Hos	Hospital
		Prov	Provincial
		Reg	Regional

5	VBAC	1	Attitudes toward	<i>Normal/natural, risky</i>
		2	Advocacy for	<i>Importance of VBAC [CP, DM]</i>
		3	Risks and benefits of	<i>Pelvic floor</i>
		4	Having confidence for	<i>Woman's motivation [CP], self-efficacy</i>
		5	Inter-pregnancy interval	<i>Timing between births, both women/CP</i>
		6	Bad outcomes [CP]	<i>Impact on CP, historically</i>
		7	Protocols for [CP]	<i>MOREOB, SOGC, guidelines, general approach to managing planned VBAC</i>
		8	Risk screening [CP]	<i>Patients' risk status</i>
		9	Being vigilant [CP]	
		10	Financial concerns [CP]	<i>Lack of</i>
6	Caesarean	1	Attitudes toward	
		2	Women's choice [CP, DM]	<i>Elective repeat caesarean</i>
		3	Risks and benefits of	
		4	Decision-to-incision time	<i>"Timely access", barrier to, getting staff to hospital</i>
7	Reflecting on their first birth (CS)	1	Vision for	<i>Woman's original expectations</i>
		2	Evaluating progress	<i>Being "on the clock", 4-1-1</i>
		3	Induction	
		4	Labour interventions	<i>Impact of, snowballing</i>
		5	General anesthesia	
		6	Pain threshold (or relief)	<i>Analgesia, morphine, epidural</i>
		7	Losing control	<i>Over body, agency, "victim", not being listened to</i>
		8	Instincts	<i>Importance of</i>
		9	Feeling depleted	<i>Exhausted, giving up, turning point</i>
		10	Experiencing failure	<i>Of natural, compared to others</i>
		11	Retrospective understanding of	<i>Reassessing, regretting, playing the "what if" game</i>
		12	Reasons for CS	<i>Ambiguity about</i>
8	Postpartum	1	Ideal vision of	
		2	Experience of	<i>Descriptions of emotional and physical state, i.e. "messed up"</i>
		3	Bonding with baby	<i>Separation</i>
		4	Lacking privacy	
		5	Experiencing failure	<i>Loss, guilt, taking away plans;</i>

				<i>recognizing women experience this [CP]</i>
		6	Role of nurses	<i>Empathy</i>
		7	Identity as a mother	<i>Joining the “club”, rite of passage</i>
		8	Figuring it out on your own	<i>Lack of information</i>
		9	Experiencing redemption	<i>In postpartum, VBAC as a strategy for</i>
9	Next birth	1	Ideal vision of	<i>Drug-free, skin-to-skin</i>
		2	Considering the feasibility of options	<i>Midwives, exercise, information</i>
		3	Experience of	<i>For women who had one</i>
		4	Clarifying values	<i>After experience or new info</i>
		5	Seeking control in the midst of uncertainty	
10	Model of care [CP, DM]	1	Making it work	<i>In the midst of limited access to services (Size, isolation, implications for VBAC)</i>
		2	Recent changes in	<i>Group prenatal, new CP, turnover, systems level reorganization</i>
		3	Ideal model	<i>“Magic wand”</i>
		4	Evidence-based practice	<i>Lack of physician motivation for, strategies for MoreOB</i>
		5	Local outcomes	<i>Statistics</i>
		6	Culturally-sensitive	
		7	Working as a team	
		8	Role of local champions	
11	Surgical services [CP, DM]	1	Competing access to	<i>Impact of, costs of</i>
		2	Dedicated OR	<i>Costs of, resources for</i>
		3	Importance of anesthesia	<i>Positive role of</i>
		4	Surgical recovery	<i>Recovering mums/babies together</i>
12	Clinical priorities [CP, DM]	1	Increasing vaginal birth rate	<i>Existing strategies</i>
		2	Making safe choices	<i>Patient safety</i>
		3	Coping with policy constraints	<i>Policy priorities for women’s health</i>
13	Care relationships	1	Continuity of care	<i>Providing [CP], receiving</i>

				<i>[woman]</i>
		2	Desired qualities of	<i>1-1 care, woman-centred, matching values</i>
		3	Physicians	<i>Characteristics of care with</i>
		4	Midwives	<i>Benefits of, experience with</i>
14	Informed consent [CP, DM]	1	Managing legal risks	
		2	Describing real world consequences	<i>Consent form, OB consult, satisfaction with</i>
15	Deliberating with the care team about mode of birth	1	Being an “information provider” [CP]	<i>Discussion of options, risks, benefits; quality of, timing of; giving a “pitch”</i>
		2	Debriefing	<i>About first birth, postpartum</i>
		3	Hearing birth stories	<i>Horror stories, bias of, influence</i>
		4	Quality of communication	<i>Dismissed, fragmented, not disclosing prefs, “good decisions”</i>
		5	Persuasion	<i>Feeling pressured, guilty</i>
		6	Listening to the woman’s voice [CP]	<i>Importance of, women’s prefs/motivation, listening to, creating a safe space for</i>
		7	Resources	<i>Books, Internet, prenatal classes, pamphlets</i>
		8	Becoming informed	<i>Questions about first birth, gaps</i>
		9	Making an actual choice	
		10	Challenges to	<i>Illusion of autonomy, choice, work, finances, getting sick or high risk, toddler, mum’s risks vs baby’s, indecisiveness</i>
		11	Type of decision maker	<i>Gut-instinct, indecisive</i>
		12	Involvement in	<i>Preferences for; Provider’s choice, patient’s, shared, family</i>
		13	Thinking irrationally	<i>Cognitive biases (i.e. loss aversion, overestimating risks, avoiding ambiguity)</i>
		14	Recognizing women’s fear and anxiety [CP]	<i>Fear of the unknown, of repeat CS</i>
		15	Timing of the decision	
16	What participant wants (to get out of this study)			

Policy Brief

Access to Maternity Services: Vaginal Birth after Caesarean

Summary of findings

Vaginal birth after caesarean (VBAC) is safe for most women, preferred by them, and endorsed by obstetricians. Repeat caesarean (CS) rates, however, continue to increase. This research studied barriers and enablers to choosing mode of birth after CS in British Columbia and found:

- Women formed their preferences for VBAC or repeat CS between pregnancies when they had limited contact with the health system. Most women were influenced less by health care providers' recommendations than by other factors. Prior birth experience was important to choice, as was information from peers and the Internet.
- Women had less communication with care providers than they wished. They wanted more "debriefing" in the immediate postpartum about their primary CS experience and its implications for future birth.
- Physicians expressed concerns about patient safety in larger and urban hospitals. They described having limited access to the operating room and anaesthesia services, and felt that this impacted the safety of planned VBAC.
- Small rural communities in the study appeared to foster practices that support planned VBAC. Practices included using standardized protocols and using opinion leaders to drive evidence based practice for birth after CS.
- The informed consent process varied depending on women's care team and local hospital policies.

Key actions for health service decision makers:

1. Create evidence-based, regional resources to support shared decision-making and informed consent for birth after CS.
2. Support clinicians in the immediate postpartum to debrief with the woman. This should include listening to her birth experience, discussing the indications for the CS and options for future births, and encouraging her if eligible to consider VBAC in future.
3. Address concerns about limited access to surgical and anaesthesia services and increase these resources where appropriate. This may include reallocating resources to provide dedicated 24/7 in-house obstetric anaesthesia and a dedicated obstetric operating room where population size and demographics warrant this level of service.

Recommendations

Recommendations to support patient decision-making:

1. Develop standardized regional and/or hospital-specific protocols that support care providers to engage in shared decision-making for birth after CS beginning before hospital discharge, and continuing in clinic visits during the first 6 weeks postpartum. Shared decision-making includes discussion of risks and benefits, actively listening to the woman's values, helping the woman understand what factors of the decision matter most to her, and making a decision together.
2. Create consistent, evidence-based provincial and/or national resources to support shared decision-making and legal consent for mode of birth after caesarean. Resources should include accurate risk estimates, information on the medical, personal, and social attributes of the decision, including mental health concerns, and describe the available resources and time required to attend an obstetric emergency.
3. Support clinicians to "debrief" with women about their primary caesarean experience beginning in the first 6 weeks postpartum, and continuing in the first trimester of the subsequent pregnancy. This dialogue may include answering women's questions, establishing their eligibility for planned VBAC based on SOGC clinical practice guidelines, encouraging eligible women to consider VBAC for future pregnancies, and reviewing the antenatal chart and operative report with the woman.
4. Identify the need for and provide mental health support services to women who experience an unplanned caesarean to mitigate the effect of birth trauma on future reproductive choices.
5. Implement continuous skin-to-skin contact after caesarean and family-centred post-surgical recovery practices.

Recommendations to support clinicians and health services:

6. Address concerns about limited access to obstetric, anaesthetic, and pediatric services and increase these resources where appropriate. This may include pooling resources to provide dedicated 24/7 in-house obstetric anaesthesia and a dedicated obstetric OR where population size and demographics warrant this level of service.
7. Make planned VBAC a provincial facility-level maternal indicator and set facility targets. Additionally monitor and evaluate indicators for VBAC eligibility, planned VBAC, and actual mode of delivery after caesarean.

About the Study

The five study communities were Fort St. John, New Westminster, Prince George, south Surrey, and Terrace.

Sites were selected to represent the diversity of obstetrical service models across the province: annual numbers of deliveries, annual VBAC rate, the type of surgeon who provided local caesarean section services, geographic diversity, and intermittent access to anaesthesia.

At the time of the study, all communities offered local women the option of VBAC.

In-depth, 1-2 hour interviews were conducted with 57 participants between April-August 2015.

Data collection and analysis were guided by grounded theory.

The Problem

The caesarean section (CS) rate has risen to alarming highs in North America, increasing the rate of maternal death and life threatening conditions such as placenta accreta.(1) This trend is largely due to a rise in the practice of elective repeat CS, as a woman who has one CS is more likely to give birth by CS in future pregnancies. The repeat CS rate has risen by more than 10% over the past 10 years and accounts for one-third of all CS in British Columbia.(2) Vaginal birth after caesarean (VBAC) is a safe option for most women and recommended by obstetricians.(1,3) Lack of uptake of planned VBAC is likely due to non-clinical factors including care provider practice patterns, malpractice concerns, financial incentives, and access to specialist obstetric and anesthesia services.(4)

Investigating Solutions

British Columbia stakeholders have made optimizing the vaginal birth rate a provincial priority over the past decade. In 2006 the BC Caesarean Birth Task Force, commissioned by the Ministry of Health, recommended that “VBAC should be offered to all women, when clinically appropriate.”(5) This was echoed in the draft BC Ministry of Health Primary Maternity Care Action Plan (2013).(6) The Provincial Health Services Authority named “attempted or planned VBAC” as its *sole* performance measure for access to maternity care in their 2013/14-2015/16 Service Plan.(7)

To bring these policies into action, it is necessary to understand how local services are currently provided and what women’s needs are in choosing mode of delivery. In spring-summer 2015 the *Birth after Caesarean* study was completed in partnership with Fraser and Northern Health Authorities. This study was completed as part of a doctoral dissertation to describe barriers and enablers to making informed choices for mode of birth after CS. Interviews were conducted with women, care providers, and decision makers in 5 communities (see Sidebar). The dissertation can be read on request (smunro@cfri.ca).

Local Evidence: Women's Experiences

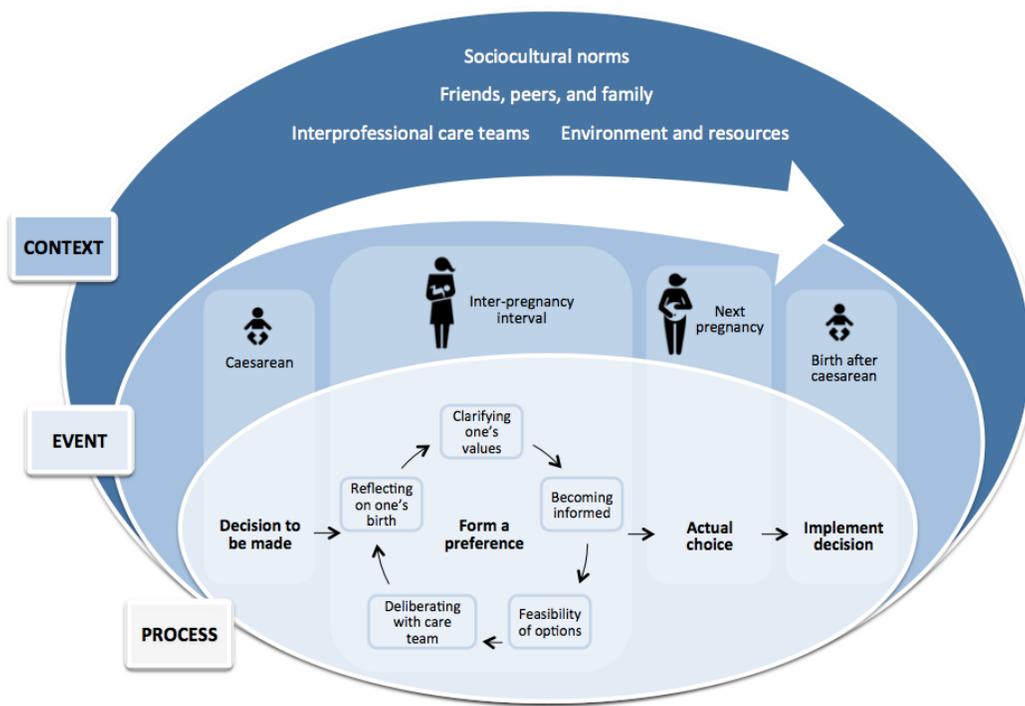
The qualitative investigation of 23 women's attitudes toward and experiences with choosing mode of birth after CS revealed the personal, social, and health system factors that influence choices.

"At my 6 week post partum check, [the physician] jokingly said, 'Are you going to have a c-section next time if you have another one?' I said, 'No way. I am so glad that I was able to have a VBAC.' And actually his jaw dropped and he said, 'Really?' He had been doing births for like 15 years and I was in his top 3 of tears that he had ever seen. He said, 'I would definitely recommend for you to have a c-section again.' And I said, ...'My first was so traumatic emotionally that I would trade it in a second for this one.' And he actually apologized to me and said, 'I am sorry. I didn't realize it was that bad.' [Crying] And he said, 'If I had known we would have been giving you more support.'"

Rural woman

- Women's decision-making for birth after CS began between pregnancies, when they had limited contact with the health care system. (See Figure 1)
- Having a healthy baby was the primary goal for all women, but it was not the only thing that mattered. Many women felt they had to make trade offs between their desire for a vaginal birth and their belief that an elective CS is safest for their baby.
- The first birth experience was the single most influential factor in informing women's preferences for birth after CS. For most women with an unplanned CS, labour and delivery were traumatic events that they wanted to avoid repeating.
- The operating room (OR) space and postpartum procedures did not facilitate birth practices that were important to women, such as immediate skin-to-skin bonding with their babies.
- Women sought information from peers and the Internet on medical risks and benefits of VBAC, what a VBAC looked and felt like, and how satisfying the experience was for women like them.
- Women wanted more information about the reasons for their first CS. Women often received a prognosis on how likely it would be for them to have a VBAC in future, which gave them confidence or doubt in their ability to have a vaginal birth. Some reviewed the antenatal chart and operative report with their care provider, which helped clarify the factors that led to their CS.
- Many believed that having a midwife would increase their chances of giving birth by VBAC. Not all rural women were able to find a midwife due to high consumer demand and low supply of midwifery services.
- Some were referred to a consultant obstetrician in their third trimester. Women often did not understand the purpose of the consult and became uncertain about their choice for mode of birth. Routine obstetrical consult for birth after CS is not required for midwifery or family physician patients, however consultation may take place for other indications.(8)

Figure 1: Choosing Birth after Caesarean, A Conceptual Map of Women's Decision-Making



"I can't guarantee the patient I have in front of me that, all things being equal, I will be able to do that c-section in the time prescribed. And it comes down then the patient says well, *'What do you mean? You don't have the resources to?'* Well that's the way it is and in the 8 sites that we function, we cannot provide that expected standard of care. So, you have a choice to make that given the low risk of rupture whether or not you wish to continue with that choice. So, that's probably one of the biggest impediments, because from the physician point of view, there is a damaged baby."

Obstetrician, Fraser Health

Local Evidence: Care Provider and Decision Maker Experiences

Care provider participants included midwives (n=4), obstetricians (n=4), family physicians (n=3), general practitioners with CS skills (n=3), nurses (n=7) and one anesthetist. Decision makers included hospital administrators (n=5), regional decision makers (n=4), and provincial policy makers (n=4).

- Access to birth after CS differed between the rural and urban communities. This stemmed from differences in how care providers exchanged information with women; standard practices among primary maternity care providers; and the availability of OR, anaesthesia, and nursing resources for emergent CS.
- Family physicians and most obstetricians described themselves as "information providers." They provided the clinical risks of planned VBAC for individual women (i.e. uterine rupture, pelvic floor problems).
- Midwives and some consultant obstetricians had more opportunities for "two-way" information exchange and "shared decision-making" - discussion of risks and benefits, actively listening to the woman's values, helping the woman understand what factors of the decision matter most to her, and making a decision together.
- In the two small rural communities, all women with a previous CS had a mandatory consult with the local surgeon. Planned VBAC was promoted as a safe, routine practice and planned VBAC rates in each community were significantly higher than the provincial average. In the three larger hospital sites (one rural, two urban), informed choice for birth after CS differed depending on the care team.
- Care providers and decision makers in the three large communities had strong patient safety and medico-legal concerns about being able to access an OR in a timely fashion if a uterine rupture was suspected. Care providers often gave this information to women.

Key Points on Women's Experiences

The locus of women's decision-making for birth after caesarean occurred between pregnancies, when they had limited contact with the health system.

A woman's first birth experience was the single most influential factor in informing her preferences for birth after caesarean.

Women received information about options for mode of delivery primarily from peers and the Internet and it was often not evidence-based.

Women desired more information exchange with care providers about mode of delivery, particularly during their in-hospital primary caesarean recovery and at their 6-week postpartum check-up.

Women desired better access to midwifery services.

Key Points on Clinical/Policy Experiences

Support for birth after caesarean differed between small rural services and their larger rural and urban counterparts.

In the small rural services, standardized practice and motivated opinion leaders contributed to a local culture in which planned VBAC was promoted as a safe, routine practice.

The informed consent process for women choosing birth after caesarean differed widely depending on their care team and local hospital policies.

Lack of dedicated obstetric OR's, competing access with other surgical specialties to access existing OR's, and lack of in-house obstetric anaesthesia and pediatrics created patient safety and medico-legal concerns for care providers and decision makers.

"I think the attitudes really need to change and the education around psychological needs and emotional needs for the families. And not just focusing on the physical needs and that whole dialogue of asking questions and actually giving informed consent. Like *true* informed consent for things instead of just, 'yes, I will' ... So that's what I would love to see."

Rural woman

Moving Forward

To realize "the vision of high quality, patient centered surgical care within a sustainable health system," as presented in *Future Directions for Surgical Services for BC*,⁽⁹⁾ health service decision makers must support healthy women to plan VBAC. Choosing between VBAC and repeat CS is a complex social process that begins early after the primary CS (see Figure 1). Findings from this study suggest that interventions to support women's decision-making could begin as early as the immediate postpartum after a primary CS.

There is limited evidence on what interventions are effective to support women's decisions for VBAC. Hospital-wide behaviour change through opinion leader education may increase planned VBAC rates.^(10,11) There is high quality evidence that audit and feedback may not be an effective tool for reducing the CS rate in Canada.^(11,12) Future research may explore the decision-making experiences of women from different cultures, low socioeconomic status, and communities with no local access to CS; and what strategies are effective in the BC context to increase women's access to planned VBAC and shared decision-making.

Potential Strategy: Patient Decision Aids

The BC Patient-Centred Care Framework emphasizes the importance of incorporating patient values into care plans, information sharing, and patient engagement in decision-making.⁽¹³⁾ Women's preferences and perceptions about planned VBAC and elective repeat CS may be addressed using a **patient decision aid (PtDA)**. Examples may be found through decisionaid.ohri.ca.

- PtDAs are patient-centred tools that help individuals become involved in decisions about their health. They provide information about health care options and their risks and benefits, and help patients clarify what matters most to them.
- PtDAs support the shared decision-making conversation between the patient and her care team. They are especially helpful for decisions where there is no "best" option and the choice depends on the individual patient's informed preferences.
- Patient decision aids and decision coaches have been shown to increase women's knowledge and certainty about their decision for birth after CS.⁽¹⁴⁾

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Sarah Munro, BA (Hons), MA, PhD Candidate

Interdisciplinary Studies Graduate Program, University of British Columbia

Project Manager, Optimal Birth BC

Child and Family Research Institute (CFRI) Trainee

Frederick Banting and Charles Best Canada Graduate Scholar

UBC Public Scholar

Supervisory Committee

Dr. Patricia Janssen, Professor, School of Population and Public Health,
UBC (Co-Supervisor)

Dr. Jude Kornelsen, Associate Professor, Department of Family Practice,
UBC (Co-Supervisor)

Dr. Kitty Corbett, Professor, University of Waterloo

Dr. Nick Bansback, Assistant Professor, School of Population and Public
Health, UBC

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