

THE MEANING OF THE BREASTFEEDING EXPERIENCE  
FOR MOTHERS IN CRITICAL CARE

by

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## DEDICATION PAGE

This paper is dedicated to the mothers who generously offered their stories of breastfeeding in critical care, so that other mothers and babies could benefit from what I have learned. I also dedicate this to all the mothers and babies I have known through the years as a La Leche League Canada (LLLC) Leader, teaching me how support for you can make all the difference. I am indebted to the women, including fellow LLLC Leaders who have helped me along the way in my own breastfeeding journey so that I could be the mother I wanted to be.

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## ABSTRACT

A small percentage of women will require hospitalization in a critical care unit during the postpartum period, and breastfeeding is a goal for many of these mothers. Critical care units are staffed by highly skilled health care providers; however, breastfeeding support is not part of the critical care unit culture. This interpretive phenomenology study explored the experience of women being in a critical care unit soon after having a baby that they planned to breastfeed. Three themes were developed after analyzing and interpreting the data: *Separation from my baby* (with sub-themes *planning helps with separation* and *creative connections*); *Breastfeeding, an afterthought in the ICU*; and *Surviving pre-empts breastfeeding*. This study provides insights about the meaning of the breastfeeding experience to mothers in critical care.

## LIST OF ABBREVIATIONS USED

ACE	Angiotensin-Converting-Enzyme
AAP	American Academy of Pediatrics
BCC	Breastfeeding Committee for Canada
CNS	Clinical Nurse Specialist
EBM	Expressed Breast Milk
HCP	Health Care Professional
HRM	Halifax Regional Municipality
ICU	Intensive Care Unit
IMCU	Intermediate Care Unit
IVF	in vitro fertilization
LLLC	La Leche League Canada
MRSA	methicillin resistant staphylococcus aureus
NICU	Neonatal Intensive Care Unit
PCNS	Perinatal Clinical Nurse Specialist
PHAC	Public Health Agency of Canada
PPH	postpartum haemorrhage
RNAO	Registered Nurses' Association of Ontario
WHO	World Health Organization

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## CHAPTER 1 INTRODUCTION

### 1.1 BREASTFEEDING HEALTH BENEFITS

Breastfeeding provides the most appropriate nutrition for physical and cognitive growth and development of infants. It supplies needed immune factors to protect against infections that cause significant infant mortality, and it has emotional benefits for infants and mothers (Alvarez, 2007; Duijts, Ramadhani & Moll, 2009; Health Canada, 2015; Krol, Rajhans, Missana & Grossman, 2015; Lonnerdal, 2003; World Health Organization [WHO], 2009). Both the WHO (2009) and Health Canada (2015) recommend exclusive breastfeeding, meaning feeding nothing but breast milk other than necessary vitamin supplements or medications, for the first six months of life. Exclusive breastfeeding reduces morbidity and mortality particularly from diarrheal disease and respiratory infections in infancy (Health Canada, 2015; Quigley, Kelly & Sacker, 2007; WHO, 2009). There are added health outcomes for premature babies who receive breast milk. Two complications of premature birth, necrotizing enterocolitis and sepsis, which can result in neonatal death, can be reduced by feeding breast milk, rather than artificial milk (formula) (Claud & Walker, 2001; Heiman & Schlaner, 2006; Hylander, Strobino & Dranireddy, 1998; Lucas & Cole, 1990; Sisk, Lovelady, Dillard, Gruber & O'Shea, 2009). Cognitive development is also improved when babies, including premature babies, are fed breast milk instead of formula (Heiman & Schlaner, 2006; Kramer et al, 2008; Quigley et al., 2012). Skin-to-skin contact between the mother and baby during breastfeeding aids in premature babies' neurobehavioural development (Altimier & Phillips, 2013; Feldman & Eidelman, 2003; Feldman, Rosenthal & Eidelman, 2014) Breastfeeding has long-term health advantages for women as well, with breastfeeding

women having lower rates of breast and ovarian cancer (Shema, Ore, Ben-Schachar, Haj & Linn, 2007), as well as lower rates of chronic diseases, such as osteoporosis, Type II diabetes and cardiovascular disease (Schnatz, Barker, Marakovits & O'Sullivan, 2010; Schwarz et al, 2010; Stuebe et al, 2011) when compared to women who feed their infants formula. In the immediate postpartum period, women who breastfeed have more efficient uterine contractions and reduction of postpartum bleeding, faster weight loss (WHO, 2009), and reduced stress levels (Uvnas-Moberg, Arn & Magnusson, 2005; WHO, 2009), as compared to women who do not breastfeed.

Breastfeeding increases a mother's sensitivity to her child, which in turn impacts maternal-infant attachment (Britton, Britton & Gronwaldt, 2006; Kim et al., 2011; Tharner et al., 2012). Sensitivity is defined as being able to accurately, consistently and promptly address an infant's needs (Britton et al., 2006; Tharner et al., 2012). A secure attachment between mother and child increases that child's ability to cope with stress in healthy ways later in life (Bowlby, 1969; Dallaire & Weinraub, 2007; Moutsiana et al., 2014; Ranson & Urichuk, 2008; Sroufe, 2005; Weinfield, Sroufe, Egeland & Carlson, 2008).

## **1.2 CURRENT MATERNAL CRITICAL CARE POPULATION**

Although pregnancy and childbirth are normal health events and processes for most women and their infants, approximately 1 in 1000 Nova Scotian women giving birth require admission to a critical care unit just before or soon after birth, due to an acute health event such as hemorrhage or a serious health condition such as a significant cardiac impairment (Baskett & O'Connell, 2009). In Nova Scotia, such critical care unit admissions necessitate the transfer of the pregnant or postpartum mother from the

maternity and pediatric hospital in Halifax facility, or from one of the regional hospitals, located elsewhere in the province to a critical care unit at the tertiary care adult acute care hospital in Halifax. If the mother has a known serious medical condition that will necessitate her admission to a critical care unit immediately postpartum, then the birth sometimes takes place at the adult care hospital, and the baby will be transferred to the maternity hospital, to either the neonatal intensive care unit or the postpartum unit.

Baskett and O'Connell (2009) reviewed the transfers within Nova Scotia from maternity units to critical care units over a period of 24 years, from 1982-2005. They found that the rate remained essentially steady at 1/1000 births, or 0.1%. Mothers requiring hospitalization in a critical care unit in the early postpartum period may be few in numbers, but they are a vulnerable patient population. Mothers requiring critical care admission also have a greater chance of having a baby that requires neonatal intensive care unit treatment due to prematurity (Cordero, Valentine, Samuels, Giannone & Nankervis, 2012; Leeners, Rath, Kuse & Neumaier-Wagner, 2005). Even babies born at term to mothers who require critical care hospitalization, have a higher incidence of needing neonatal intensive care unit care, (Ray, Urquia, Berger & Vermeulen, 2012) thereby making them a more vulnerable infant.

Nova Scotia has some of the lowest overall rates of breastfeeding in Canada. In Nova Scotia between the years 2003 and 2011, breastfeeding initiation rates ranged from 76.9- 80.3%, compared with the Canadian rate of 84.6-88.2%. Rates of exclusive breastfeeding until six months of age ranged from 14.2-25.3% in Nova Scotia, compared with national rates of 16.8-28.0% during this same period (Statistics Canada, 2013). There are no statistics kept on the breastfeeding rates of women who were cared for in

critical care units in the days and weeks after giving birth, but we can assume that the rate of maternal intent to breastfeed for these mothers would likely be similar to a rate of 82.5% for the general population of pregnant women in Nova Scotia (Public Health Agency of Canada [PHAC], 2008). Although the number of women and babies who are affected by hospitalization of the mother in a critical care unit is small, breastfeeding in this population is no less important than for other groups. .

The most common reasons for maternal critical care treatment are postpartum haemorrhage and hypertensive disorders (Baskett & O'Connell 2009; Pollock, Rose & Dennis, 2010; Ray et al., 2012; Zwart, Dupuis, Richters, Ory & Roosmalen, 2010), followed by infection, cardiac disease, and respiratory problems (Baskett, 2008; Pollock et al., 2010; Rios et al, 2012). However, because of a lack of standardization of admission diagnoses for these patients, it is sometimes difficult to ascertain reasons for transfer of obstetric patients to intensive care (Pollock et al., 2010).

Mothers who have impaired cardiac function due to moderate to severe congenital heart defects (Maxwell, El-Sayed, Riley & Carvalho, 2013), or acquired disorders such as a cardiomyopathy (Howlett et al, 2010), tend to have planned births in adult acute care hospitals where they are admitted to critical care immediately postpartum for hemodynamic or cardiac rhythm monitoring/treatment (Arafeb & McMurty Baird, 2006; S. Matheson, personal communication, 2013). During the years 2008-2012 in Halifax, the average number of planned cardiac admissions was 4 per year (S. Matheson, personal communication, 2013). This population of mothers is increasing due to improved care of patients with congenital heart disease, so that there are more of these women reaching reproductive age (Arafeb & McMurty Baird, 2006; Brooks, 2011; Maxwell et al., 2013;

Regitz-Zagrosek et al., 2011; Sloan & Quinn, 2013). Potentially, this could result in an increase in the rates of breastfeeding women being admitted to critical care units.

Numbers of postpartum women being admitted to Halifax critical care units seem to be increasing for non-cardiac reasons too, as a result of serious health complications associated with increasing rates of caesarean section, obesity, multiple pregnancies and maternal age (Baskett, 2008; Baskett & O'Connell, 2009). Although obstetric-specific critical care or “high dependency” units do exist in some large urban areas in the United States and the United Kingdom, there is no critical care obstetric unit in Nova Scotia or Canada. However some large maternity hospitals in Ontario and British Columbia provide labour and delivery nurses with critical care training. In Halifax Regional Municipality (HRM), hospitalization for childbearing occurs at the maternity hospital. However, if a woman's health is unstable enough that she requires invasive/continual hemodynamic or heart rhythm monitoring or ventilatory support, she is transported to one of the critical care units at the adult care hospital. If her infant has already been born, it remains under care at the maternity hospital; if the birth occurs at the adult acute care hospital, the baby is transported to the maternity hospital as there are no neonatology or newborn care services at the adult facility. The adult care hospital critical care units currently have no formal policy for supporting breastfeeding in postpartum mothers. If the admission is planned, the mother will usually undergo a planned Caesarean section at the adult care hospital, and there is some coordination for breastfeeding support between the Perinatal Clinical Nurse Specialist (PCNS) and the receiving unit. Women choose during pregnancy how they plan to feed their baby and information about the mother's intent to breastfeed is documented in the prenatal record. However, the prenatal record is

not always included in the health records forwarded to critical care units when pregnant or postpartum women are admitted to the adult acute care facility for critical care.

If the mother intends to breastfeed, the Perinatal Clinical Nurse Specialist (PCNS), with the mother, will make a plan to provide support to her after the birth, such as providing an electric breast pump and make arrangements for the expressed breastmilk (EBM) to be delivered to the baby. Family members, or the PCNS if no family is available, transport any EBM to the baby's unit. If the mother is on one of the cardiac units the Cardiovascular Clinical Nurse Specialist (CCNS) is also included in the plan of care for the mother and will help facilitate breast milk expression and transport of expressed breastmilk to the baby. Because of the physical separation of mother and baby, breastfeeding is more complicated, than if the mother had regular contact with her baby. It becomes necessary for the mother to either manually express or pump her milk, which then needs to be stored properly and sent to the maternity centre to be fed to her baby. Currently in adult care hospital critical care units, most of the direct breastfeeding assistance with pumping or putting the baby to breast is done by the family/partner who are not perinatal experts, and by the Perinatal Clinical Nurse Specialist (PCNS) from the maternity hospital. The PCNS provides a written care plan for staff if the mother/family is not independent with milk expression, including instructions on how to safely store and transport expressed breast milk (EBM). The PCNS also verbally checks with the staff to address concerns or plans before she leaves the unit, and she leaves her contact information. When the baby's health is stable, and if there are no infection control concerns, such as methicillin resistant staphylococcus aureus (MRSA) outbreaks, from either hospital, the baby can be brought to the critical care unit for visits with the mother.

During those visits, the mother can have skin-to-skin time with her baby and breastfeed if she is able (G. Carson, personal communication, 2013). If the baby is discharged from the maternity hospital before the mother is released from the critical care area, the baby can stay with the mother in her critical care room, provided a family member can also stay to care specifically for the baby. In this instance, the baby is considered to be a visitor to the unit, rather than a patient; thus the QEII staff cannot be responsible for the baby's care. Although this arrangement is possible it is not routinely offered to the mothers in critical care, and rarely happens. If the mother is discharged from the critical care unit within 2-3 days post-birth, and before her infant is discharged from the hospital (often due to Neonatal Intensive Care Unit [NICU] care being required), she may be transferred to the postpartum unit at the maternity hospital, so she can be closer to her baby (G. Carson, personal communication, 2013). If a woman's discharge from the critical care unit is after the usual postpartum stay period, she is discharged home and would visit and care for her baby similarly to other mothers whose baby is in the NICU.

When a breastfeeding woman experiences an unexpected obstetric or medical emergency requiring admission to an adult care hospital critical care unit, arrangements for breastfeeding support are also possible. However, there is not the same degree of coordination of support as with planned admissions, with critical care unit nurses and clinical nurse educators often citing mothers' severity of illness or infection concerns as barriers to breastfeeding (A. Lamb, personal communication, 2013; K. Webb, personal communication, 2013). When unit personnel were consulted regarding current practices in relation to breastfeeding support, the only lactation support they identified was their calling one of the maternity hospital units for guidance around breast milk pumping and

safe storage/transport of EBM. The babies do not typically come to the critical care units for skin-to-skin time or visits with the mother because the babies often require NICU admission, due to care provider perceptions that the mothers are seen as too sick or that the critical care unit is not appropriate for a newborn. The NICU and the adult critical care units have used video conferencing recently so mothers can see their babies and talk to them (B. Hewitt, personal communication, 2012), in order to promote mother-infant attachment (Mehler et al., 2011; Minton, Allen & Valdes, 2014).

### **1.3 BREASTFEEDING MANAGEMENT AND SUPPORT**

Milk production is dependent upon hormonal changes immediately after birth and upon frequent milk removal from the breast, either by the baby suckling or the mother removing by manual means, through use of a breast pump or hand-expressing it; otherwise milk synthesis will cease (Riordan & Wambach, 2010). Initiation of breastfeeding within an hour of birth, as compared to two hours or later, has been shown to increase chances of exclusive breastfeeding for six months (Chalmers et al, 2009; Perrine, Scanlon, Li, Odom & Grummer-Strawn, 2012). Delaying initiation may result in mothers only partially breastfeeding, i.e., regularly supplementing with artificial breast milk substitutes (Perrine et al., 2012), which does not afford the same degree of benefit that exclusive breastfeeding does (Duijts et al., 2009; McNeil, Labbok & Abrahams, 2010). A delay in breast stimulation and milk removal, particularly for greater than 48 hours after birth, can impact the future milk supply of a woman (Ekstrom, Widstrom & Nissen, 2003; Hurst, 2007; Nyqvist et al., 2013; Riordan & Wambach, 2010; Spatz, 2012), decreasing her chances of exclusively breastfeeding her child, or leading to weaning before six months of age (Hurst, 2007).



Separation of the mother and baby after birth, such as when infants and/or their mothers require care in a critical care unit and/or NICU in the early postpartum period, can delay initiation of breastfeeding. Separation and subsequent use of bottles to feed the baby in the mother's absence can result in the baby having difficulty latching to the breast. Pain from poor positioning of the baby's mouth at the breast, can negatively impact a woman's ability to successfully breastfeed (Brown & Jordan, 2013). Poor positioning can also result in the baby not draining the breast adequately, causing discomfort from blocked milk ducts and decreasing the milk supply available (Riordan & Wambach, 2010). Mothers who intend to breastfeed their infant, and are not able because of their own medical condition, can be left with psychological distress and feelings of inadequacy as a mother (Benn & Minton, 2008; Elmir, Schmied, Wilkes & Jackson, 2011).

There is evidence of professional health care practices that help support and protect breastfeeding, including: skin-to-skin contact between mother and baby and/or initiating breastfeeding within 1 hour of birth; not providing formula to infants, except when medically indicated; and keeping mothers and babies together in the same hospital room, known as rooming-in (Chalmers et al, 2009; Kramer et al., 2001; Perrine et al., 2012; Registered Nurses' Association of Ontario [RNAO], 2003; WHO, 1989). See Appendix A. Of the 10 steps to promote, protect and support breastfeeding (Breastfeeding Committee for Canada [BCC], 2012), (see Appendix B), those steps most relevant to breastfeeding experiences of women in critical care units include facilitating skin-to-skin contact after birth (Step 4), showing mothers how to breastfeed (Step 5), showing mothers how to maintain lactation even if they should be separated from their

infants (Step 5), providing only breast milk, unless otherwise medically indicated (Step 6), and keeping mothers and babies together (Step 7). Maintaining lactation while separated can be done by removing the milk from the breast with a breast milk pump or by hand expression (Nyqvist et al., 2013; Riordan & Wambach, 2010; Spatz, 2012). There is evidence that hand expression can produce adequate milk volumes to feed the baby and that it may improve longer term breastfeeding (Becker, Smith & Cooney, 2015; Flaherman et al., 2012; Riordan & Wambach, 2010). Teaching a mother how to hand express is part of the WHO 10 Steps to Successful Breastfeeding (1989), as an effective way to maintain her milk supply if she is separated from her baby. Numerous studies have been done on healthy women's experiences of breastfeeding support that indicate that mothers want realistic information about breastfeeding, consistent professional support on how to breastfeed, and non-judgemental support that recognizes their personal experiences and feelings about breastfeeding (Chalmers et al., 2009; Dykes, 2005; Graffy & Taylor, 2005; Guyer, Millward & Berger, 2012). However, little has been published about these breastfeeding experiences of women admitted to a critical care unit after having a baby. Only an abstract addressing one research study was found on the experience of breastfeeding in a critical care environment (Benn & Minton, 2008); no published report of those study results are available, but the authors concluded that the mothers needed earlier, individualized breastfeeding support and time to learn about their babies. Studies done on separation of mothers and babies and the effect on breastfeeding have focused on situations where the baby is in a neonatal intensive care unit (Conde-Agudelo, Belizan & Diaz-Rossello, 2011; Maastrup, Bojesen, Kronborg & Hallstrom, 2012; Nyqvist et al., 2013). Mothers who are critically ill postpartum often face increased

challenges to becoming a mother, as compared with other women. Their ability to mother their child is delayed by physical incapacitation, and recovery can be both physically and emotionally difficult (Beck & Watson, 2008; Benn & Minton, 2008; Engstrom & Lindberg, 2011; Furuta, Sandall & Bick, 2014; Thompson, Heal, Roberts & Ellwood, 2010). Women reported feeling inadequate as a mother, and had a lack of confidence in their mothering immediately after the birth and during the first few weeks at home (Elmir et al., 2011; Thompson et al., 2010). Breastfeeding is not the focus for health care providers who practice in critical care areas (Engstrom & Lindberg, 2013; Kynoch, Paxton & Chang, 2010a), nor is it likely the focus of the family, or even the mother herself initially, (Benn & Minton, 2008). However, strategies such as keeping mothers and babies together, skin-to-skin contact, and milk expression, known to facilitate breastfeeding success in clinical maternity care environments (Chalmers et al, 2009; WHO, 1989, 2009) can be employed, depending on the mother's health and the care area, to promote and support breastfeeding in adult critical care units (Watson, Hermann & Johnson, 2013).

Breastfeeding provides too many physical and emotional advantages to women and children to be disregarded because of postnatal complications that necessitate a transfer to a clinical environment outside of usual maternity care. Lactation is started by the physiologic changes immediately after birth. Its continuation is dependent on milk removal from the breast by breastfeeding, manual expression or pumping, being initiated early in the postpartum period if the mother is to establish and maintain her milk supply. Breastfeeding or milk removal should not be postponed until the woman is discharged from a critical care unit, otherwise the vital early time period in which milk production

commences may well be past. Her body will stop the process if the breasts are not stimulated because the hormones necessary for milk production naturally drop off over the first postpartum week (Riordan & Wambach, 2010). All mothers, including mothers who are critically ill, have the right to be supported in their efforts to achieve exclusive breastfeeding for six months and to have a satisfying breastfeeding experience (American Academy of Pediatrics [AAP], 2012; Canadian Paediatric Society [CPS], 2009; Registered Nurses Association of Ontario [RNAO], 2003; UNICEF, 2005).

To support mothers who are hospitalized in critical care units in the early postpartum period, it is essential we better understand the lived experiences of the women in this particular context. A search of the literature has shown that there is very little published research available on this topic, and there will be an increasing population of mothers who will need postpartum critical care in the future (Baskett & O'Connell, 2009; Sloan & Quinn, 2013; Small et al., 2012). Phenomenology is a research methodology ideally suited to capture the meaning of a phenomenon such as breastfeeding while in a critical care area, and will be employed in this study. Interpretive phenomenology is suited to professional nursing research, since nursing is focused on the holistic view of the patient, which includes what the health or illness experience means to that particular patient (Earle, 2010).

#### **1.4 PURPOSE STATEMENT**

The purpose of this study is to discover the meaning of the mothers' experiences of breastfeeding when they are admitted to a critical care unit in the postpartum period. The objectives for the study are to: 1) capture the mothers experiences of what it was like to be a postpartum mother in a critical care area; 2) interpret these experiences to arrive at

a set of themes that will contribute to our understanding of what it means to mothers to be in a critical care unit when they intended to breastfeed; 3) publish the study findings to build upon what is known about the current care of this population; and 4) present the study findings to clinical leaders to influence nursing care practices related to breastfeeding in critical care.

### **1.5 REFLEXIVITY**

The researcher is part of the research process in conducting interpretive phenomenology and this means that my knowledge and experience influence the research process. Researchers using interpretive phenomenological methodology need to make explicit their history with the phenomenon, and how their own experiences, whether personal or professional, impact their interpretation of the phenomenon being studied (Creswell, 2013). Reflexivity is used throughout the interpretive process to enable the researcher to reflect on their influence on the findings (Creswell, 2013; Jootun, McGee & Marland, 2009).

My professional work as a Registered Nurse has provided varied experiences that make me familiar with cardiology, critical care, and postpartum nursing. In the course of pursuing my Master of Nursing degree, I had the opportunity to combine my professional nursing experience and my volunteer experience as a Leader with the La Leche League Canada. Over time I developed a toolkit (as of yet unimplemented) that would provide practical guidance for non-perinatal nurses in their supporting breastfeeding with these mothers.

In addition to my clinical practice as a nurse, I am a mother who had complicated pregnancies and breastfed my three daughters, one of whom has a heart defect that is

considered a complication for future pregnancy. I have an embodied understanding of breastfeeding because of my years of personal breastfeeding experience and my twelve years working with La Leche League Canada that cannot be separated from my life; it has greatly influenced my decision to take up this research.

## **CHAPTER 2 LITERATURE REVIEW**

The literature review will include the research evidence about the health outcomes of breastfeeding, how lactation is established, impact of separation of mother and baby on breastfeeding, the role of supportive practices of health care professionals in breastfeeding success, and what is known about the breastfeeding experiences of women who receive postpartum care in more typical maternity environments, as well as mothers who spend the early postpartum period in a critical care setting. The literature search was done using the search terms "obstetric critical care", "maternal critical care", "obstetric ICU", "maternal ICU", "breastfeeding", "breastfeeding experience", "postpartum hemorrhage", "complicated birth", and "mothers' experience". CINAHL and PubMed databases were searched for the years 1980-2015. Embase and Web of Science databases were searched for "all years".

### **2.1 HEALTH BENEFITS OF BREASTFEEDING**

Health Canada (2015), in a joint statement with the Canadian Paediatric Society, the Dietitians of Canada and the Breastfeeding Committee for Canada describe breastfeeding as the "normal and unequalled method to feed infants" (Principles and Recommendations section). Exclusive breastfeeding for the first six months after birth is advised as there have been noted advantages, and no disadvantages, to the infant and mother (Kramer & Kakuma, 2012).

There are numerous physical benefits to the infant from breastfeeding, such as decreased incidences of asthma (Silvers et al, 2012), respiratory, gastrointestinal and ear infections (Duijts et al., 2008; Kramer & Kakuma, 2012; Quigley et al., 2007), Sudden Infant Death Syndrome (Hauck, Thompson, Tanabe, Moon & Vennemann, 2011;

Vennemann et al., 2009), obesity (Rzehak et al, 2009; Shi, de Groh & Morrison, 2013), some childhood cancers (Ortega-Garcia et al., 2007) and diabetes (Rosenbauer, Herzig & Giani, 2008; Stuebe & Swartz, 2010). Infants who are breastfed also have increased cognitive abilities, shown through intelligence scale measurements (Kramer et al, 2008; Quigley et al, 2012), improved early development with respect to motor skills, language and adaptability (Oddy et al, 2011), and fewer behaviour problems, such as conduct disorders and hyperactivity (Heikkila, Sacker, Kelly, Renfrew & Quigley, 2011), than infants who are formula fed. The World Health Organization recommends exclusive breastfeeding, meaning nothing except breast milk, to be consumed by children from birth to six months of age (Health Canada, 2015; WHO, 2009).

Breastfeeding provides positive health outcomes to the mother as well, including decreased incidence of certain types of ovarian cancer (Jordan, Cushing-Haugen, Wicklund, Doherty & Rossing, 2012; Su, Pasalich, Lee & Binns, 2013; Tung et al., 2003), breast cancer (De Silva, Senarath, Gunatilake & Lokuhetty, 2010; Shema et al., 2007), osteoporosis (Schnatz et al., 2010), Type II diabetes (Stuebe et al, 2011), and cardiovascular disease (Schwarz et al, 2010; Stuebe et al, 2011). Breastfeeding is also known to be relaxing for mothers because of the hormone release of oxytocin that occurs with each feeding (Feldman, Weller, Zagoory-Sharon & Levine, 2007). Oxytocin, a hormone present during pregnancy and needed for the milk ejection reflex, increases calmness in mothers and promotes attachment behaviours such as keeping the baby close, specific vocalizations, looking at the baby and touching the baby (Feldman, 2012; Feldman et al, 2007). The stress-relieving ability of oxytocin is system-wide, causing a shift in the mother's autonomic nervous system to a more parasympathetic response and



less of a sympathetic response, as shown by changes in heart rate and skin conductance response to psychological and physiological stressors (Mezzacappa, Kelsey & Katkin, 2005).

Bigelow, Power, MacLellan-Peters, Alex and McDonald (2012) found evidence of decreased physiological stress measured in maternal cortisol levels, and reduced reports of depressive symptoms in mothers who engaged in daily skin-to-skin contact during the first postpartum month, as compared to mothers who were not requested to provide daily skin-to-skin contact during that same time period. The initial rate of breastfeeding was similar between groups in this study. Again, oxytocin is connected to the reduced stress response in these mothers, as oxytocin levels rise with touching and extended physical contact (Bigelow et al., 2012; Uvnas-Moberg et al., 2005). The experience of being cared for in an intensive care unit is known to be highly stressful, both for the patient and family (Engstrom & Lindberg, 2011; Lof, Berggron & Ahlstrom, 2008). The mothers in Watson et al.'s article (2013) on developing and implementing policy to support women who are acutely ill, reported how important skin-to-skin contact and having the baby close by, were to their recovery.

Emotional attachment of a child to a parent is important for the future mental health of that child. A secure attachment of a child to her/his mother enhances the child's ability to cope positively with stress later in life (Bowlby, 1969; Fearon, Bakersman-Kranenburg, van IJzendoorn, Lapsley & Roisman, 2010; Steele, Steele & Croft, 2008). Research supports breastfeeding as a means of encouraging attachment of the mother and infant through close physical contact, providing opportunities to learn about each other, and develop a reciprocal relationship (Britton et al., 2006; Tharner et al., 2012). Klaus

and Kennell (1982) have described the early postnatal behaviours of mothers such as touching, making eye contact, using a highly pitched voice that babies respond to and reciprocate. Babies also have a series of early behaviours when placed skin-to-skin with their mothers immediately postpartum, such as gazing at mother, moving towards the breast and suckling (Widstrom et al, 2011), and any separation of mother and baby decreases the amount of attachment behaviours exhibited (Feldman, Weller, Leckman, Kuint & Eidelman, 1999). Widstrom et al (2011) and Feldman and Eidelman (2007) both documented this sensitive period after birth and its connection to later infant neuro-behavioural development, cognitive development and parental attachment. Babies attach more securely with the mother if there is “frequent and sustained physical contact” (Bowlby, 1969, p. 345) with the mother, and if the mother can meet the baby’s needs, meaning she understands the baby’s cues and provides a predictable pattern of responses to the baby (Bigelow & Power, 2012). Bigelow and Power’s study (2012) involved regular skin to skin contact over the first month postpartum, showing that even if there is delay in contact immediately after birth, skin-to-skin contact later on can be of benefit. Research done by Mehler et al. (2011) with very low birth weight infants, indicates that even seeing their baby in the first three hours after birth increases maternal attachment during the infant’s first year.

Becoming a mother, beginning to form an attachment to the baby, begins during pregnancy (Klaus & Kennell, 1982; Mercer, 1986, 2004; Ross, 2012). Mercer compared several studies on the transition of a pregnant woman to a mother, and found that the tasks involved in becoming a mother were similar despite differences in mothers’ ages, parity and health status. After birth, new mothers focus on learning about their new baby

and recovering physically, moving toward a new normal, and finally achieving a maternal identity (Mercer, 2004). The studies showed that the stages can vary in length of time and overlap. Mothers in intensive care may have difficulty moving through these stages because they have a complicated recovery, and may be unable to learn about their infant or provide any care during that time. Their “new normal” (Mercer, 2004, p. 231) can be delayed, as can their achievement of maternal identity. Engstrom and Lindberg (2011) found the mothers in their study on the experience of being in a critical care unit after a complicated birth, did not feel like a mother due to the separation from their infant. Benn and Minton (2008), in their study on breastfeeding after intensive care, concluded that mothers need more time to focus on getting to know their babies. Mothers of premature babies requiring neonatal intensive care have similar feelings of not feeling like they are a mother until a later time after the birth when they are able to engage in their baby’s care (Fenwick, Barclay & Schmied, 2008; Flacking, Ewald, Nyqvist & Starrin, 2006; Lupton & Fenwick, 2001). Mothers of premature babies have stated that until they hold their baby they do not really feel like the child’s mother (Fenwick et al., 2008; Reid, 2000; Zabielski, 1994).

## **2.2 PHYSIOLOGY OF BREASTFEEDING AND NEED FOR EARLY LACTATION SUPPORT**

Milk production is dependent on the breast growth that occurs during pregnancy and the subsequent dramatic hormonal changes that occur after birth and expulsion of the placenta. After the placenta is expelled, there is a sharp decrease in progesterone and prolactin release from the anterior pituitary and milk production is triggered, all within the first 48 hours. Breast stimulation from the baby nursing at the breast, breastmilk expression by hand or by a breast milk pump if the baby and mother are separated

(Nyqvist et al., 2013) also increases prolactin levels, promoting milk production (Hill et al., 2009). The hormone oxytocin is released by the posterior pituitary and is responsible for the contraction of the uterus during and after labour, and the milk ejection reflex. The removal of milk from the breast by the baby or by expression, manually or with a pump, causes oxytocin to be released and milk to be ejected (Hill et al., 2009; Hurst, 2007). Skin-to-skin contact between mother and infant is also known to increase oxytocin levels, and is the basis for the WHO's (2009) recommendation of skin-to-skin contact immediately post birth, or as soon as possible thereafter if either the mother or baby's health is unstable. Frequent feedings in the early days and weeks post birth stimulate increasing milk volumes required for infant satiation of hunger and infant growth (Hill et al., 2009; Neville, Morton & Umemura, 2001; Nommensen-Rivers, Chantry, Peerson, Cohen & Dewey, 2010). A delay in milk removal can impact the future supply of milk from a mother and her ability to exclusively breastfeed for the first six months as recommended (Brownell, Howard, Lawrence & Dozier, 2012; Hurst, 2007). After postpartum day eight, milk production will be entirely under autocrine control, meaning the supply of milk will be determined by the demand of the baby, either through direct breastfeeding or breastmilk expression (Hill et al., 2009; Riordan & Wambach, 2010).

### **2.3 CLINICAL PRACTICES SUPPORTING BREASTFEEDING**

Canadian hospitals use the Breastfeeding Committee for Canada (BCC) BFI Integrated 10 Steps Practice Outcome Indicators for Hospitals and Community Health Services (2012), to promote, protect and support breastfeeding. The 10 steps have been shown to increase breastfeeding initiation rates and duration of breastfeeding (Chalmers et al., 2009; Perrine et al., 2012; RNAO, 2003). The steps that have the strongest effect on

breastfeeding success have been found to be breastfeeding within 1 hour of birth (Step 4), giving only breast milk (Step 6), mother-infant dyads 24 hour rooming in (Step 7), care for babies without the use of artificial teats or pacifiers (Step 9); and provide information on both lay and professional breastfeeding support in the community (Step 10) (Chalmers et al., 2009; Perrine et al., 2012). The RNAO's Breastfeeding Best Practice Guidelines for Nurses (2003) also note (Step 10) and antenatal education on breastfeeding importance and process (Step 3), and assisting mothers to breastfeed and maintain lactation if separated from their baby ( Step 5) to be particularly efficacious for breastfeeding success.

#### **2.4 MOTHER-BABY SEPARATION EFFECT ON BREASTFEEDING**

If a mother or baby, or both, are ill in the immediate postpartum period, they may need to be separated to care for them in a more specialized area, perhaps even in different facilities. Protecting the mother's milk supply with milk expression, either with an electric breast pump or manually with hand expression, is essential, so that when she and/or the infant is ready and able for the baby to feed at the breast, she will have milk (Watson et al., 2013). The physiology of lactation makes it imperative that milk expression begin as soon after birth as possible in order to provide the mother the best chance of having full milk supply.

Skin-to-skin contact has been shown to increase exclusive breastfeeding rates (Chalmers et al, 2009; Moore, Anderson, Bergman & Dowswell, 2012). It has also been shown to increase oxytocin levels, which promote positive mothering behaviours and mother-infant interaction (Unvas-Moberg et al., 2005). However if early skin-to-skin

contact is not possible, there is still benefit if it is commenced when both mother and baby are able to be together (Nagai et al., 2011).

Keeping mother and baby together in the same room has been shown to increase chances of breastfeeding as well (BCC, 2012; Chalmers et al., 2009; Perrine et al., 2012), but if separation is necessary, minimizing the length or facilitating visits has been shown to provide comfort to the mother (Watson et al., 2013). The Ten Steps have been revised for use in neonatal intensive care units, taking into consideration that separation of mother and infant is likely, but that breastfeeding or breastmilk feeding is still the goal of care for these mother-baby dyads (Nyqvist et al., 2009), and is achievable despite separation.

## **2.5 HEALTHY MOTHERS EXPERIENCES WITH BREASTFEEDING SUPPORT**

Breastfeeding support by health care providers is well documented as being positively correlated with breastfeeding success (Hannula, Kaunonen & Tarrka, 2008; Manhire, Hagan & Floyd, 2007; Renfrew, McCormick, Wade, Quinn & Dowswell, 2012; WHO, 2009). Breastfeeding initiation rates have been shown to improve with targeted breastfeeding support and education from health care providers antenatally (Dyson, McCormick & Renfrew, 2008). Research done to determine what breastfeeding support women find helpful has shown that women want realistic antenatal preparation, hands on assistance postpartum to help them learn how to breastfeed, trouble-shooting advice when problems occur, and adequate time from health care providers to give practical help and acknowledge the individual feelings of mothers towards breastfeeding (Dykes, 2005; Graffy & Taylor, 2005; Guyer et al., 2012). Peer support is noted by the Breastfeeding Committee for Canada (2012), Guyer et al. (2012) and Schmied, Beake, Sheehan,

McCourt & Dykes (2011) as having benefit for breastfeeding mothers. Sisk et al. (2009) discuss how intent to breastfeed is a predictor of breastfeeding success, and intent of mothers at risk of premature labour can be increased by health care professionals' providing individualized education on the benefits of human milk for premature infants. There are also practices that mothers have identified as unhelpful to their breastfeeding experience; these include conflicting advice/information, judgemental behaviour towards formula feeding, aggressive touching, and people not listening to what the mothers want to do with regards to feeding and infant care (Guyer et al., 2012; Schmied et al., 2011).

## **2.6 BREASTFEEDING IN CRITICAL CARE ENVIRONMENTS**

The research on breastfeeding while the mother is being cared for in a critical care area is very limited. Only the abstract of one study that specifically dealt with the subject, by Benn and Minton (2008) was retrieved. That study used an exploratory qualitative method with 12 women to study their experience of breastfeeding after being admitted to an ICU in the postpartum period. There were four themes identified from the data: 1) ambivalence about breastfeeding; 2) breastfeeding as a way to make up for the birth; 3) delay of mature milk production; and 4) lack of confidence caring for the baby caused by separation of the mother and baby. Because no full report of the study results has been published, no further detail about the study and these themes is available.

## **2.7 BREASTFEEDING IN RELATION TO ACUTE MATERNAL ILLNESS**

Because of the paucity of literature directly done on breastfeeding and mothers in critical care, I expanded my literature search terms to include obstetric patients and critical care treatment. This search revealed research that can also inform the study of breastfeeding in this patient population, even if the studies' purpose was not specific to

breastfeeding in this population. For example, breastfeeding after a postpartum haemorrhage (PPH), but not necessarily in a critical care setting, was explored by Thompson et al. (2010) in a descriptive study done with 206 women. The authors found that the women with PPH had delays in initiation of breastfeeding, with only half being able to initiate within the first two hours after birth, due to separation of mother and baby, and this delay resulted in lower rates of exclusive breastfeeding, i.e. they had higher rates of partial breastfeeding. Partial breastfeeding is a risk factor for weaning before the baby is six months of age (WHO, 2009). Beck and Watson (2008) conducted a phenomenological study of traumatic birth and breastfeeding, in which traumatic birth was defined by the mother. They found that breastfeeding could either be helpful or unhelpful to the physical and emotional recovery of these mothers. Some mothers reported that breastfeeding provided mental healing for them, making up for the traumatic birth and empowering them as mothers. However in others, breastfeeding was reported as another failure if they had insufficient milk, another source of physical pain, another violation of their bodies, a reminder of the traumatic birth or a detached experience for them. The authors recommended individual support for breastfeeding, watching how mothers interact with their babies and acknowledgement of emotions around the birth. This study supports that breastfeeding will be more challenging for mothers who have a complicated birth.

Elmir et al. (2011) used a qualitative naturalistic inquiry research design to study the mothering experience of 21 Australian women who underwent emergency hysterectomies due to postpartum hemorrhage. The resulting themes from the data were “initial separation: loss of bonding time, feelings of failure, and relinquishing care of the



infant” (p. 1119). These mothers were separated from their babies for up to 72 hours. Thompson et al. (2010) also studied mothers’ breastfeeding experiences following a PPH, but not necessarily in the context of a critical care environment. In this study, two-thirds of the mothers and infants were separated for over 2 hours. They used mixed methods, with a sample of 39 mothers for the qualitative descriptive portion of the study. They identified three themes: “difficulty initiating or sustaining breastfeeding; need for education and support; and emotional sequelae” (p. 6). Engstrom and Lindberg (2011) conducted a descriptive inductive qualitative study with 8 mothers who had a complicated operative delivery and then required care in the ICU in the early postpartum period. They found one common theme among the mothers, that of “wishing to be in control and together as a family” (p. 66). Having family close is significant for breastfeeding, as family support is known to increase breastfeeding success (Health Canada, 2015; Manhire et al., 2007). These studies, though not directly investigating the breastfeeding experience in a critical care unit, are helpful in understanding important aspects of women’s postpartum experience when they have postpartum health challenges, such as the impact of separation of mothers from their baby and need for family support, and can be considered relevant to breastfeeding success. Their identified themes are consistent with those found by Benn and Minton (2008) and support the need for more research to more specifically understand women’s breastfeeding experience when they are in critical care units after having a baby.

## **2.8 SUMMARY**

Breastfeeding is important physically and emotionally to mothers and babies, and is documented as the most appropriate way to feed infants. Lactation is started by

hormonal changes that occur after birth and is maintained by the continued removal of milk from the breast. If milk is not removed frequently enough from the breast, lactation will cease. When mothers and babies are separated at birth because of maternal illness, and perhaps a concurrent newborn physical instability, the establishment and maintenance of lactation can be difficult. Added to these difficulties is how we care for women in this situation; these mothers are cared for in non-obstetric settings with staff who are likely unfamiliar with lactation support. However, researchers have identified that health care providers play an important and influential role in helping mothers achieve breastfeeding success, and have described what mothers identify as helpful to them in establishing and maintaining breastfeeding. In fact, certain health care provider practices, such as the 10 steps of the Baby Friendly Initiative (BCC, 2012), have been shown to improve breastfeeding rates, primarily with healthy mothers and babies.

Research on women's postpartum experiences when they are acutely ill has been limited. Likewise, there has been a paucity of reported research on the mother's lived experience of breastfeeding in a critical care area, as well as on how breastfeeding is currently supported in critical care areas; only one published study on women's experience of breastfeeding while in an intensive care unit was located.

The lack of knowledge around the breastfeeding experience of mothers who have been in critical care units during the postpartum period indicated a need for a study on breastfeeding experiences of mothers who had intent to breastfeed and were admitted to critical care after birth. I chose to employ interpretive phenomenology methodology because this methodology and method are appropriate in enabling mothers to describe their breastfeeding experience and the meaning of that experience to them. The results

will be useful for the nurses and other health professionals providing direct care to this population of women, to policy makers about how to enable direct care providers to best support mothers who have intent to breastfeed their babies, and to all future mothers who may need intensive care unit admission in the postpartum period, and their babies.

## CHAPTER 3 METHODOLOGY

### 3.1 INTERPRETIVE PHENOMENOLOGY

In this study of the meaning and essence of the experience of postpartum women who have been admitted to critical care, I am using an interpretive phenomenology design. Phenomenology is a branch of philosophy concerned with the meaning of a lived experience of a phenomenon (Creswell, 2013). Phenomenology is also a research methodology. There are several phenomenological movements that have been developed by different philosophers, (Holloway & Wheeler, 2002; van Manen, 2011, Phenomenology Online: Orientation in phenomenology). Edmund Husserl, for example, is considered the originator of modern phenomenology, and researchers conducting Husserlian phenomenology use a descriptive approach and employ bracketing, a practice in which they attempt to distance themselves from any preconceptions they may have about the phenomenon (McConnell-Henry, Chapman & Francis, 2009).

Martin Heidegger, a student of Husserl, further developed phenomenology and changed the focus from epistemological questions that ask how we know what we know, to ontological questions about what it is to be a human being, and how the world makes sense to us (Leonard, 1994). “*Dasein*” is the term Heidegger uses when talking about humans, how they exist in the world and how they are capable of understanding their own being (Heidegger, 1962, p. 31). *Dasein* is the basis for his philosophy (McConnell-Henry, et al., 2009). Sembera, (2007) states that when *dasein* is directly translated from German to English it means “there” and “being” (p. 47), so *dasein* refers to being there, or being-in-the-world.

Being-in-the-world is how Heidegger describes humans; it is the “essential state” (Heidegger, 1962, p. 80) of humans, meaning that people cannot remove themselves from where they exist in the world. They are in a certain place and time in history, and this being part of them, there is always meaning in their being (McConnell-Henry et al., 2009). It is their everyday way of living, their meaning of being shaped by time, space, and what people care about, their “concerns” (Heidegger, 1962).

*Dasein*'s understanding of being is determined by time and space (Heidegger, 1962). Heidegger's view of time has direction and relation as it applies to being in the world, meaning the past and future influences the present in relation to the things that matter to a person (Leonard, 1994). Being-in-the-world is also spatial, where *dasein* is situated in the world; meaning what experiences are more relevant to them, or closer spatially (Heidegger, 1962; Mackey, 2005; McConnell-Henry et al., 2009).

Another important aspect of Heideggerian phenomenology includes hermeneutics, or the interpretation of meaning (Holloway & Wheeler, 2002). Heidegger believed that people always have an understanding of an experience just by being in the world (Sembera, 2007), “every encounter is an interpretation based on our background” (Leonard, 1994, p. 52). Each encounter builds our understanding of ourselves and the experience (McConnell-Henry et al., 2009). In research, being in the world refers as much to the nurse researcher as the research participant and the research question (McConnell-Henry et al., 2009). In interpretive phenomenology the researcher has some pre-knowledge or understanding of the phenomenon to be studied; thus, objectivity is impossible as the researcher comes with a history, culture, language and perspective on the phenomenon under investigation (Lopez & Willis, 2004; McConnell-Henry et al.,

2009). Interpretive phenomenologists assume that the interpretive process is circular in that knowledge gained from the whole text will then be used to reconsider parts of the text. New understanding necessitates looking back and forth at the whole and also at its parts (Benner, 1985).

Interpretive phenomenology based on Heidegger's philosophy of the person, is congruent with the problems and questions that arise in providing nursing care for people in real life situations. Nurses care for people according to their life situation, and what is important to them. They consider the patient as a unique person who has their own reality of their illness or health situation (Earle, 2010).

Interpretive phenomenology based on Heidegger, is an appropriate methodology to study breastfeeding as it allows the researcher to uncover what the phenomenon was like for the woman in her particular context (Spencer, 2008), i.e., of a mother who intended to breastfeed and was admitted to critical care postnatally. Heideggerian phenomenology is particularly appropriate because I, as the researcher, bring my own breastfeeding knowledge to the research to aid in the interpretation of the data. The meaning of that experience will be determined by a mixing of the participant's description and interpretation and the researcher's own interpretation of the described phenomenon (Lopez & Willis, 2004). Interpretive studies in nursing go beyond describing the phenomenon, to interpreting how the phenomenon was experienced by the person involved. This interpretation can be used to consider how practices could be changed to support the breastfeeding experience (Leonard, 1994). The goal of using hermeneutic phenomenology in health sciences research is to interpret the data so that it will be useable to guide clinical practice, education, policy making and further research (Lopez

& Willis, 2004). Although the results from phenomenology studies are not meant to be generalized to the population, but rather transferable, they provide insight into the experience from the patient's point of view that may not be apparent to the health care providers caring for them. The essence of the experience, what was important to the patients at that time, can be used to change policies and practices to provide more appropriate and meaningful care.

## **3.2 METHODS**

### **3.2.1 Sampling**

Purposive sampling was employed in the study to ensure the sample was representative of the phenomenon being studied (Creswell, 2013; Haber, LoBiondo-Wood, Cameron & Singh, 2009; Holloway & Wheeler, 2002). I recruited participants from the population of women who had intended to breastfeed their infant and were then cared for in one of the adult care hospital critical care units, (Units 3A, 5.1, 5.2 or 6.4) for a minimum of 24 hours, in the first six weeks postpartum. Women were eligible for study inclusion if they were 18 years of age or older, had been admitted to a critical care unit within the first six weeks after giving birth during the years 2009-2014, to an infant that was at least 22 weeks gestation and had intended to breastfeed. The participants also had to be able to read and write English, and have the capacity to consent.

### **3.2.2 Sample size**

Baskett and O'Connell (2009) reviewed the transfers of women within Nova Scotia from maternity units to critical care units over a period of 24 years, from 1982-2005. They found that the transfer rate remained essentially steady at 1/1000 births, or 0.1%. There were 8613 births in Nova Scotia in 2013-2014 (Statistics Canada, 2015), so

eight mothers would have been expected to need critical care treatment during that year. As no specific breastfeeding statistics exist for women receiving care in critical care units, I assumed that these eight mothers would have the same rate of intent to breastfeed as the rest of the population of women in Nova Scotia (82.5%); thus, I anticipated there should be six women in that year who could meet the study criteria.

Researchers using phenomenology do not intend to generalize their results, but rather provide an in-depth exploration and interpretation of the phenomenon (Creswell, 2013). Therefore, sample size was to be adequate to provide an interpretation of the meaning and essence of the breastfeeding experiences of the postpartum mothers in critical care units. Sample size for phenomenological studies can range in numbers, but commonly 2 to 10 participants are interviewed (Creswell, 2013; Oiler Boyd, 2001), and due to the relatively low numbers of obstetric admissions to critical care, I anticipated a sample size between 5 and 8. For the study to be trustworthy, it was important to have enough participants to provide adequate data so I, as the researcher, would be able to interpret similar themes from the experiences of the participants (Haber et al., 2009; Oiler Boyd, 2001).

### **3.2.3 Recruitment**

After obtaining ethical approval from the maternity hospital, the initial contact with the potential participants was made by the Perinatal Clinical Nurse Specialist (PCNS) who in her role had a clinical relationship with these women. The PCNS accessed the names through the electronic patient record of hospitalization, to review the care situations to ensure they were patients she had worked with, and to obtain the most



current contact information. This also provided an opportunity to determine if they met the eligibility criteria.

The PCNS mailed an introduction letter (see Appendix C) to potential participants to: 1) introduce the researcher; 2) provide a description of the study; and 3) explain that she (the PCNS) would contact them by telephone two weeks from the mailing date to answer questions and seek permission to pass on their contact information to me as the researcher. The PCNS's letter also indicated that the women could call her office or email her if they did not wish to receive that follow-up phone call. After she spoke to the potential participant, and the woman provided permission for me (the researcher) to contact her, the PCNS provided me with the woman's contact information. I then telephoned the woman, explained the study, answered any questions she may have had, and confirmed that she met the eligibility criteria. If the woman agreed to participate, I made arrangements with her for a time and place for the first interview. Informed consent was obtained prior to the beginning of the interview.

#### **3.2.4 Data collection**

In keeping with a phenomenological study design, I conducted interviews face-to-face when possible, and in locations suitable to the mothers, including homes, and private areas in a library and a university common area. I conducted interviews with two of the participants, both the initial and follow-up, via telephone because the mothers lived more than one hour travel away from Halifax. The initial interviews ranged between 35 and 75 minutes, regardless of how the interview was conducted. A second interview was done to clarify what was said in the first interview, and to give the mothers another chance to expand on their experiences (Holloway & Wheeler, 2002). The second interview was

shorter, ranging from 15 to 46 minutes long. The interviews were audio recorded, and then transcribed verbatim for analysis. I made notes during and after the interviews that were used to aid in the analysis and interpretation of the interviews.

I used an interview guide (see Appendix D) to maintain focus on the phenomenon being studied so that the research topic was covered adequately. The interview had direction, but my questions were open-ended, and in everyday language, so the participant told their story in their own way and in a comfortable fashion. In an interview, the body language and unique phrases a participant may use are all part of the data collection and were used in my interpretation (Kvale & Brinkman, 2009). The goal is for the participant to use description to show the meaning of an experience as it relates to their life-world. The interviews elicited narratives around breastfeeding in a critical care environment in the early postpartum period, and depicted the meaning of the experience as it relates to time, space, body and relationships of that mother. My primary question was:

“Tell me about your experience of being in a critical care unit soon after having a baby that you planned to breastfeed, and how that compared to what you were hoping for.”

I also used probes (included in Appendix D) to aid the mothers in expanding upon their descriptions, such as,

“Think back and describe what your plan for breastfeeding was like for that particular baby? What did you expect that breastfeeding would be like?”

“Tell me about your stay in critical care after your baby was born? How did you feel? What stands out the most about being there?”

“Who or what was helpful to you with your breastfeeding plan and can you describe how they were helpful?”

The follow-up interviews proved to be very helpful in clarifying information such as timelines related to events or confusing statements from the initial interview. The mothers all agreed that the summary of the initial interview provided to them reflected overall what had been discussed. The initial themes developed from that interview were also reviewed with the mothers, and they all agreed they represented their particular experience during that time. The mothers seemed to be comfortable with the interviewer, as evidenced by relaxed speech and body language, and did not hesitate to correct or comment on the summary if they felt it was warranted. I feel this is a testament to the reliability of the data; for example, I thought Colleen did not understand why her discharge was delayed, but she stated she *did* [emphasis added] know why she had not been discharged as planned, but was frustrated by the delay. Anna commented on the wording of the interview summary, saying “I would like to point out, I'm happy you explained how they could have helped. ... I'm happy you qualified that a little bit ...”

These examples of member-checking demonstrate the validity of the findings (Creswell, 2013). The second interviews felt more relaxed compared to the initial interviews, with the rapport already established. I felt the follow-up interviews were particularly helpful at giving the mothers a chance to expand upon topics, even when it appeared that the topic might have been exhausted during the first interview. When it was revisited, they gave a more in-depth explanation or reflection. The follow-up interviews became more than just a clarification and member checking, they actually provided new data in each case.

### **3.2.5 Data analysis**

Researchers who employ phenomenology do not follow a step-by-step process for data analysis; however, there are guiding principles to assist the researcher during the analysis process. Data analysis begins with data collection and is an ongoing process (Holloway & Wheeler, 2002). Creswell (2013) describes analysis as a “spiral” where the beginning is data collection and the end is a story about the phenomenon, and in the middle the researcher spirals around with the data, reading and interpreting. Kvale and Brinkman, (2009) describe hermeneutical interpretation in a similar way; referring to it as circular, and note that analysis includes separating the whole into parts, interpreting and then feeding the interpretation back into the whole. Interpretation is a creative activity that adds to the meaning and brings something of the researcher into the work so the data are co-authored between the participant and the researcher. Transcriptions of data do not capture the context of the live interview that aids in interpretation, so taking notes during the interview, writing field notes post-interview and reflective journaling helped capture the intangibles of the interview that transcriptions do not (Kvale & Brinkmann, 2009).

For this study, I used elements of Benner’s style of data analysis based on Heideggerian phenomenology as it is particularly useful in nursing research (Earle, 2010). Benner (1985) suggests the use of paradigm cases, exemplars and thematic analysis to study phenomena in order to grasp the meaning of the phenomenon, not generate theoretically derived knowledge. The researcher looks for commonalities and differences with regards to meanings, bodily experience, temporality, spaces/situations, and what concerns the participant brings forth as important (Benner, 1985, 1994).

A paradigm case is a good example of the whole lived experience. The text is interpreted so that the experience as it was lived is available to the reader, with the

language, and social context, intact. Benner (1994) describes how the text should be reviewed and interpreted as a whole during this process of building a paradigm case. To discover a paradigm case, all notes and transcriptions connected to a participant are read and reread to obtain a sense of the whole. I wrote notes on recurrent themes, common phrases, participant concerns, events described, and overall what I saw as the experience for that participant in the form of a holistic analysis. Any questions that arose from the initial interpretation of the data were used at the second interview to clarify meanings and encourage the participant to expand upon their experience. Each interview was treated the same, and they were compared to look for emerging themes, searching for commonalities and differences between the participants. However, because of the diversity of experiences of my participants, with some women needing additional surgery or experiencing other complications, while others were very well physically and only needed hemodynamic or cardiac monitoring, I did not identify one that was a typical or “paradigm” case. Therefore, I focused on Benner’s other analysis strategies of thematic analysis and use of exemplars. Although comparison of paradigm cases can reveal differences in the experience, which adds to the trustworthiness of the data (Benner, 1994), I relied on other methods, such as member checking to ensure rigour in the study results. Study rigour will be described separately.

Thematic analysis is Benner’s second data analysis strategy. Themes refer to patterns or concerns that appear in the text. Theme identification is done in a sweeping manner and not focused on particular words. Thematic analysis is a way of moving back and forth between parts and the whole of the interviews (Benner, 1985, 1994). I read the transcribed texts from different participants and looked for common themes, at the same

time noting differences among participants' experiences. Where there were distinct differences, I also compared my understanding of the meaning of the experience of one participant to another.

The third method of data analysis I used was finding commonalities or particular experiences in the text to be used as examples, or “exemplars” of that pattern or experience (Benner, 1994; Leonard, 1994). Exemplars are a shorter method of presenting a specific theme, as opposed to the longer paradigm cases (Benner, 1985). Short quotations from the participants are used as exemplars in the written study results to illustrate the uncovered meanings, themes in the findings. Exemplars are concrete examples of meanings and serve to illustrate the interpreted experiences. Exemplars also reveal the change in thinking about the experience by the participant. The participants are only identified by a pseudonym in this report, to protect their confidentiality. Exemplars were noted in the process of data analysis and interpretation, and filed as examples to be used in the finished thesis report.

The two methods of data analysis were employed to illuminate the differences and commonalities of the experiences. The analysis shows commonalities and differences in the actual situation of the participant, their embodied experience of breastfeeding, the temporality of the experience, what their concerns were, and their common understandings of the experience. Thematic related meaning and embodied experiences are how the concerns of the participants in this particular situation are revealed. Thematic analysis was used to interpret differences and similarities, and by doing so provoked questions for the second interview about concerns or lines of inquiry that were not considered by the researcher until this point (Benner, 1994). Themes revealed

incongruities between what participants said about what the experience was like, and what the practices in place are stated to be in place with regards to breastfeeding. I used these methods to enter the lifeworld of the participant in order to provide an interpretation of the experiences that was not theoretical or deconstructed, but rather “socially embedded knowledge” (Benner, 1994, p. 112). Ultimately, I wanted to pull out the meaning of the experience for that participant. I used Benner’s methods of data analysis to illustrate the process of gathering the data with interview questions, using quotations from the participants and my interpretation of the data to come up with the conclusions about the lived experience (Haber et al., 2009)

### **3.3 STUDY QUALITY**

In this study, quality was be maintained by following the five criteria suggested by Creswell (2013).

1. Evidence that the writer understands the philosophy behind phenomenology.
2. The phenomenon being studied is clearly defined.
3. The process for data collection and analysis is described and is congruent with phenomenological study, such as Benner’s procedures.
4. The essence of the experience is put forth, and there is adequate description of the experience in its particular context for that to be apparent to the reader.
5. Reflection is obvious throughout the study, not just at the outset.

### **3.4 ETHICS**

Ethics approval was from the maternity hospital and informed consent (see Appendix E) was obtained from participants by the principal investigator prior to interviews. The participants were advised that their participation was voluntary and they

could withdraw at any time, and their responses would be kept confidential by using numbers only as identifiers on the transcripts. The participants were assigned a pseudonym at a later date for the thesis report and for future publication. Participant names and any other identifying information were separated from their responses. Hard copy data were locked in two filing cabinets, so that information with identifiers was separated from transcripts. Data kept on the researcher's laptop computer were backed up, encrypted and password protected.

The risk to the participants was low, but may have included psychological distress. There was no risk of physical harm. At the time of the initial interview, the researcher provided participants with a thank you letter containing information (see Appendix F) on how to access mental health services, public health breastfeeding support or parenting support services. The potential benefits to the participants included validation of their experience, an opportunity to talk about breastfeeding during a stressful time in their lives, and potential for the results to increase health care provider awareness of breastfeeding support needs of this unique group of mothers and ultimately change clinical practices to improve the experiences and health of future mothers and infants.

### **3.5 RELEVANCE OF THE RESEARCH**

This study provided mothers who required critical care treatment in the postpartum period an opportunity to describe their breastfeeding experience during that time. The data generated from this research will increase awareness of the special needs of this patient population, which will potentially impact nursing and other health



professional practice and policy, enhancing breastfeeding support for mothers who require critical care in the future.

## CHAPTER 4 FINDINGS

### 4.1 PARTICIPANTS

I interviewed 7 women who were admitted to and cared for in a critical care unit within the first six weeks of their postpartum period for at least 24 hours. The length of stay in a critical care unit ranged from 24 hours to seven days. These women experienced this critical care stay during years 2009 to 2014. None of the women were cared for directly by the researcher. Each participant was interviewed twice for a total of 14 interviews, providing 10.7 hours of interview data that was then transcribed and analyzed. At the time of the birth, the women in this study ranged in age from 28 to 37 years of age, and their babies were born between 31 weeks and 6 days to 37 weeks of gestation. There was some cultural diversity in the sample of women.

The majority of women (six of seven) were admitted to the critical care unit due to some form of cardiac disease. Two of the six had their cardiac disease diagnosed prior to pregnancy, while three developed cardiac problems during the pregnancy; these five women had their critical care unit admissions planned in advance. The sixth woman with cardiac disease experienced an unplanned, emergency admission for an aortic dissection, and gave birth to her baby the day after admission. The seventh participant was diagnosed with cancer during her pregnancy, and also had her critical care admission planned prior to giving birth. Three of the mothers were hospitalized antepartum because of symptoms from their medical conditions, and two of these three made plans should either they or their baby not survive the pregnancy. One mother moved from her community to Halifax so she would be close to the adult care hospital where her medical team was located, if an emergency birth was indicated. The one woman who had an emergency admission to

critical care came to the hospital because of back pain, from a previously unknown cardiac condition. All the mothers had conditions that impacted their daily life and functioning.

Three women in the study had given birth to their second child just prior to their critical care admission, and four women had just had their first baby. Previous obstetric histories included one pregnancy achieved via in vitro fertilization; two women experienced one previous miscarriage, while a third had previously experienced three. Four of the seven women reported that they were not planning any more children. All three who had older children had breastfed them. The majority of the participants reported that they themselves had been breastfed as well. Of the seven participants, six expressed breastmilk while in the critical care unit; the seventh began expression later, after cardiac surgery and transfer to the intermediate care unit, but she had to suspend expression when she had a surgical complication. One woman discontinued pumping due to a surgical incisional infection, while another participant purposely stopped milk expression after her tumour resection. Ultimately, only four of the women were able to feed their baby at the breast.

## **4.2 THEMES**

Analysis of the interviews resulted in three themes being identified, with two sub-themes for one of them.

Table 1 Themes and sub-themes

Themes	Sub-themes
Separation from my baby	<p data-bbox="862 436 1256 474">Planning helps with separation</p> <p data-bbox="862 512 1131 550">Creative connections</p>
Breastfeeding, an afterthought in the ICU	
Surviving pre-empts breastfeeding	

The first theme “Separation from my baby” revealed in mothers’ interview data was about separation from their baby, how difficult that was and how unnatural it felt. They spoke of how they tried to prepare for separation if they knew it was a certainty, and trying to establish a connection to their baby even though they were apart. The second theme, “Breastfeeding, an afterthought in the ICU” was about how breastfeeding support and lactation management was handled in the critical care units by the nursing and medical staff. The mothers’ views about what they expected and what they received were often different. Mothers in the study described varying degrees of satisfaction with the support they received: for example, one woman described being very pleased, while another was quite disappointed and disillusioned with the breastfeeding support and her whole experience in the critical care unit. The mothers did not always specifically express dissatisfaction with the help they received, but their descriptions of their care in the critical care unit illustrated perceived gaps in nurses’ and physicians’ knowledge related to breastfeeding and a perceived unwillingness of critical care health care providers to provide care outside of the usual skill set of the critical care unit. The third and last

theme, “Surviving pre-empts breastfeeding”, that was common to all mothers was their surviving their illness and being able to mother their child long-term was ultimately more important than breastfeeding. The mothers were not willing to breastfeed at any cost to their own health, or risk their baby receiving breastmilk that might not be safe due to maternal medications present in breastmilk.

The findings are presented separately as themes and sub-themes, with exemplars from participants as evidence of how the theme was developed. The participants’ own words are powerful illustration of the themes, far better than my words can describe the experience. Participants conveyed emotion with their words, making the experience come alive for the reader. I present contrasting views, via exemplars, to show that the experiences were different and to show the range of responses. I also provide examples provided to display how a theme was present without participants expressly stating something. I was able to provide this level of interpretation because of my knowledge of nursing, of the critical care unit environment, and of breastfeeding.

#### **4.2.1 Separation from my baby**

“Separation from my baby” was a recurrent theme evident in the data. This theme was emotionally charged and participants recounted their perceptions of the impact it had on their breastfeeding efforts. Within the “Separation from my baby” theme, two subthemes clearly emerged: *Planning Helps with Separation* and *Creative Connections*. Routine separation of mother and baby after birth during hospitalization is one maternity practice that is known to be detrimental to establishing milk supply and breastfeeding success. The mothers in the study were separated from their baby very soon after birth due to maternal health challenges, and in some instances due to infant health issues. One

woman had her baby skin-to-skin on her chest for about two minutes immediately after birth, before the baby was transferred to the NICU due to the newborn's low blood sugar. Another mother was able to have skin-to-skin contact with her baby shortly after birth because the ambulance unit personnel transferring the woman to the critical care unit stopped at the NICU to facilitate this maternal-infant connection. Another mother described her contact as being able to hold her baby in the "crook of my arm". One was able to hold her baby's hand briefly right after birth. The other three participants had no chance to touch their babies until days after giving birth. Skin-to-skin contact immediately after birth is so vital to a mother and to breastfeeding. Usually a mother wants to hold her baby and have her baby close. Oxytocin, a hormone needed for lactation, and which promotes mothering behaviours, is increased with skin-to-skin contact. That first contact is a way for mothers and babies to become acquainted, and continue the reciprocal process of attachment that has started during pregnancy. Some mothers in the study for whom this initial contact did not occur expressed a sense of loss. Frances said,

You know, a lot of times when you talk to people, they're like it's very important the first couple of moments of attachment and, you know, to cuddle. And I lost all of that. They did the epidural, they froze me too much. I couldn't even really lift my arms to touch her.

Each mother talked about how difficult the separation from their baby was, and in particular, the mother and baby being in different buildings seemed to make the separation feel more pronounced. "I really wish I would have stayed at the [maternity

hospital].... Even though maybe I wouldn't have been able to see [my baby], at least I knew I would have been in the same building” (Frances).

Gina stated

And I'm really grateful I knew she was going to be separated from me before that happened. If I hadn't known that, if I had just made the assumption that she was going to be tucked in beside me or I was going to be transported over there, I think it would have been very, very difficult for me. Because you know, when you're pregnant ... it's you and the baby. You can't help but be bonded together.

And then all of a sudden you're separated. ... But this was a forced separation.

Separation of the mothers and babies resulted in the mothers having to express breastmilk in order to begin establishing their milk supply. All but two of the mothers were aware, well in advance, that they would be separated from their babies and in different hospitals. Separation is included as a theme because of the emotional effect it had on the mothers, with one describing it as “That was like the hardest thing I've ever done in my life. That was... I'll never forget how hard that was. Just having her gone like... And not being able to hold her” (Diane). It was evident how tough it was for the mothers from the mental coping methods they used to try to manage that separation. Gina said

I found it best if I didn't think too hard about why I was there or what had happened. Because I found if I thought too much about why I was there and who I was missing, it would have been too hard.

Anna expressed a similar thought

I remembered knowing that I need to leave, don't get too attached. Like I was the one who said, "No, okay, that's enough, put him away," because I knew that I

couldn't... I didn't want it to be so amazing that I wouldn't want to give him up.  
Like it would be only harder if I held him longer.

Separation caused a great deal of distress in the mothers, as evidenced by Estelle “That was harder than the breastfeeding, the separation”. Frances stated “But it was the toughest thing ever to be separated and try to do everything without breaking down”. The separation seemed to make all aspects of the hospitalization more difficult. Frances described her time in the critical care unit as, “It was lonely. And then... I mean they explained it to me. I knew this was going to happen but I never expected it would have been that tough.” The mothers were often alone while in the critical care unit because family members were seeing the baby at the other hospital, attending to other children at home, or in the situations when the mothers had longer hospital stays, were back to work.

The mothers mentioned time and waiting in relation to separation when describing their experience. Most participants had to wait until they were medically stable before they were able to be physically reunited with and hold their babies. The time to be reunited ranged from 2.5 - 6 days, with some mothers spending time in both critical care and less acute units of the adult care hospital. All mothers had been able to see their babies at the time of birth. One participant while still an inpatient in critical care was able to go out on day passes to visit her baby at the NICU. Another mother had her baby come and visit her twice while in the critical care unit. The visit was for about 90 minutes and was facilitated because two of the maternity hospital nurses volunteered to come in and accompany and monitor the baby while at the adult care hospital. During this time the mother was permitted to have skin-to-skin contact with her baby. However this mother was not permitted to put the baby to the breast or express milk because of critical care



health provider perceptions that the resultant oxytocin release could have a hypertensive effect. There was added time pressure for the mothers who knew they would require surgery postpartum as well, as in the case of Diane,

So yeah, she was born on Thursday. And my surgery was Tuesday. And I knew that it was Tuesday. And it was just every day that went by was like, okay, one day closer to my surgery. ... Because as soon as the surgery is done then I could focus on okay, as soon as I'm done recovering, I can go and be with her.

Facing a major surgery following the birth changed the focus for Beth, from trying to breastfeed to just spending skin-to-skin time with the baby

So when I was with him after my surgery, after my C-section surgery, my focus then was not breastfeeding. It's like this may be my last 5 days with my child that I'll ever live to see. I'm focusing on giving him love and snuggles.

Separation meant lost time with their baby at a time that is very special to mothers, when they want to get to know their baby and begin to mother them. "Because all I could think is she's not going to love me, she's not going to bond with me, I've lost the time"

(Frances). The mothers described breastfeeding as an important part of their relationship with their baby. Those who were able to successfully establish a milk supply and go on to feed their baby at their breast did not reflect back on that early separation with such a sense of loss. The mothers who were never able to establish a breastfeeding relationship went back to that early separation as a source of the breastfeeding problems and really felt the loss of mothering in the first few days. There was a profound sense of loss for some because of the early separation, and because of the eventual loss of a planned breastfeeding relationship. Through observations of the mothers with their children

during interviews, or from talking to the mothers about their children during telephone interviews, all the mothers seemed to have established usual mother-child relationships once they were all home and living together. However, the loss of those early moments together and of that unique breastfeeding relationship was still present for them at the time of the interviews, months or years after their critical care unit experience. Diane wanted to make sure that I knew one thing:

I just wanted to let you know that like even though it didn't work out for me, I look back with a sense of kind of regret about it. And I think like for me and for anybody else that kind of goes through something like that, it's just it's disappointing when you can't do and kind of fulfill kind of everything you wanted to be as a mom in those early days especially.

The theme of separation being very difficult for the mothers was found in the interviews of each participant. Even though most mothers were aware before the birth occurred that they would be separated from their infant for a period of time, the reality was much more intense than what they could have imagined. This theme relates to the significance of time to these mothers. There is irretrievably lost time and putting off or avoiding attachment with their baby for a better or later time when they would not be separated from them again. Some of the women were aware of how many hours they and their baby were separated, and they described counting the days until certain milestones were reached, such as planned monitoring periods in critical care, or when planned surgeries would take place following the birth. These mothers were also separated from the rest of their families, which is a different situation from the usual postpartum experience. There was no usual family time or rooming in period with the partner present

that is important for parent-infant attachment (Engstrom & Lindberg, 2011; Harvey, 1992).

#### **4.2.1.1 Sub-theme: Preparation helps with separation**

This sub-theme was apparent in the participants' descriptions of how things unfolded during their pregnancy as they prepared for the birth and separation from their baby. It was evident in their descriptions that they needed time to mentally process their own health problems and changes to their birth plans to accommodate their unique situations. Beth recounted how there had to be a plan for her prenatal hospitalization at the maternity center instead of at the acute care centre. She was very appreciative of the planning, as she preferred to be in the maternity center for the baby's safety if the timing of the birth was unexpected. She also described being included in discussions about the timing of delivery and her subsequent surgery, and how she felt like she was offered options around when the baby would be born and if she wanted to try to have a vaginal birth as opposed to a Caesarean section. She was able to decide for herself. In contrast, Frances felt that she was not included in decisions, and that she had to "fight" to have her wishes considered. She was traveling from outside the province for prenatal cardiology and obstetric appointments and was told "to always bring my bag because they never knew when or if I would stay or if the baby would come". She never had time to catch up and process the events

I really felt like I was one of those guinea pigs that they kept wanting to pass on. Because I went from room to room, to hospital to hospital, during the whole first 3 weeks, and I still had no idea what was going on. And I was connected to breathing machines and heart monitors. And I was like, this is supposed to be my

dream come true to have a little child. And then my parents, like we had to discuss about what if we had to give birth and I might lose my child.

The difference in tone and experience between these two participants was striking.

The mothers who had planned critical care unit admissions were all thankful that there was time for them to mentally prepare for the impending separation from the baby after the birth. Even with forewarning the separation was very difficult. “I was trying to mentally prepare myself as much as I could, and just talk myself through it. I was like this won't be so bad. And in the meantime, I had made everybody know my wishes” (Estelle). This mother contacted the NICU to ensure that the staff there knew she would be pumping and sending expressed breastmilk to be fed to her baby. Gina tried to maintain some normalcy of the postpartum experience by naming the child “So I went in knowing that I would be saying good-bye. And we chose to name her so that when she went over to the [maternity hospital], she'd have a name”. This same mother expressed that she was thankful to have advanced knowledge of the separation in order to prepare herself.

It was a surprise in November. But by the time she was born... it gave me time to process that we weren't going to be born...she wasn't going to stay in the same hospital. It would have been a shock to me had they not told me.

#### **4.2.1.2 Sub-theme: Creative connections.**

Because of the separation from her baby, each participant had a need to connect with baby in some way while they were in the critical care unit and physically separated from baby. In each circumstance, every mother found some creative way to feel like she was attaching to her baby. When she could not touch or care for baby in the usual ways mothers interact with their baby, by holding, feeding, gazing, talking, and providing

physical care, such as bathing and changing diapers, the participants found other ways to connect with their babies to feel like mothers. These connections were their way to start to fulfill a mothering role even though they were separated from the baby geographically. Some had made plans for how they would make sure that their baby knew who they were, and others had to improvise along the way if the admission was of a more emergent nature. They had to rely on others to help them make and keep a connection. It was not only important to the participants that their baby knew they were their mother, but also that their family and the health care professionals who were caring for them and for their baby also knew that they were the mother.

Connecting was described by the first participant and came through very clearly as a theme when she was describing notable aspects of her stay in critical care. She had not had her baby visit her while she was in critical care, and when asked if she had been able to have any other contact with him, she described how technology had played a role in her connecting with her son. I had not planned an interview prompt around connection in that way, but it seemed a natural question and opened a new area to explore. From the analysis of the first interview, I realized there was something important related to connections and adapted subsequent interviews to include a question about how they connected with their baby if participants did not spontaneously introduce the topic.

I have limited this sub-theme to connecting with their babies only. The mothers also spoke about connections or a lack of connection with health care providers, but I felt that the descriptions of the varied ways that they connected to their babies were the most important connection for them at that time. The interaction between mothers and the health care providers is captured within the theme “Breastfeeding, an afterthought in the

ICU”. Connections with baby were made by the following means: visual, spoken, and physical.

Photographs, videos and even video conferencing via telephone with the baby while in the Neonatal Intensive Care Unit were ways mothers in this study visually connected with their babies. For the most part, the pictures were helpful to the mothers, as illustrated by Diane “And so wherever I went in the hospital, I had this little picture with the three of us in a frame by my bed. So it was always next to me. So that was good”. However, three of them described how it was difficult to look at pictures of their babies in the NICU because of the equipment attached to their babies:

My husband brought a picture of our daughter the first night I was there. And she had... She had been intubated and it [tube] had been taped on her head. I found that picture hard to look at because... And I think by the next day, it [tube] was out. But that picture stayed so it was hard to look at that picture. So we still have it and it doesn't bother me as much now. But it bothered me that day (Gina)

Pictures also reminded participants of what they were missing, as stated by Frances “My family were taking pictures and they were bringing pictures over. But when they would do that, I asked them to stop because it was pictures of like [my partner's] parents holding my child.” The way the mothers would keep the pictures with them at all times seems similar to what a mother usually does with her baby, carries him with her everywhere. Colleen stated “So my husband gave me one picture. It was with me all the time.”

Diane relayed how video conferencing provided such a strong connection to her baby that her breasts spontaneously leaked during that live video encounter, even though this participant had no established milk supply. This participant was not permitted to

express breast milk to feed her baby while in critical care due to her specific condition and her physician's concerns around oxytocin's effect on blood pressure. Estelle gave permission for staff to take pictures during the birth and was very appreciative of that "first" picture of her baby taken by a physician when her baby was emergently separated from her in the operating room due to low Apgar scores and low blood sugar.

The pictures and videos mothers had in their possession while they were in a critical care unit were also used as a way to tell others about their babies. They would show them to health care professionals in the critical care unit as a way to transmit their message that they were the mother of this baby, and therefore the expert on their baby. Anna said that staff asking to see a picture of her baby was a way of showing support to her as a new mother. It was part of the way she could present her baby to others.

Participants learned about their baby's health status, by family members relaying updates and by NICU staff telling them about their child over the telephone. Frances said "At least I was able to call [the NICU]. Like I think I called 6, 7 times a day." Participants related how being able to use that information to tell others, such as health care professionals in critical care, about their baby helped them feel more like their mother.

It helped with making the connection because I got to talk about him. ... when I got to talk about [him] to the nurses at the [adult care hospital], it was almost like I got to talk about my son but without ever really seeing him like other family members had. (Anna)

It was also important for the mothers to convey to the staff caring for their baby at another institution, that they were the child's mother and were involved in their care, even if at a distance.

And I would call. I made sure that I called and spoke with like the daytime nurse, the night time nurse at the NICU to make sure that they knew that 1) I wasn't as sick as it might sound that I am, and 2) so they know that I'm involved. (Anna)

Anna also prepared self-recorded books prenatally as a way to connect with her son, so he could hear her voice while he was in the NICU and she was in the critical care unit. "Reading the stories at the [maternity hospital] just so he could hear my voice still."

Although the mothers in this study were unable to provide any direct physical care for their babies, they did find concrete ways to care for their babies. Two mothers sent pieces of their own clothing to the NICU to be placed in the baby's bassinette to familiarize the baby to the mother's scent. These mothers wanted their babies to be able to recognize them by their scent. "And they brought me one of her blankets that she was wrapped in to try to get her smell. I sent over one of my shirts so she could have my scent" (Frances). Providing expressed breastmilk was another way that the mothers in this study could mother their babies, by feeding them, without directly breastfeeding them. It was important to the mothers to connect in these ways, as by doing so they alone could provide what others could not.

That's the only thing I can do, yes. So it really should be supported. Like it's the only thing I can do to help the baby who's being cared for by... But yeah, as a mother, you want to be able to be there. And the only thing you can do is send these little drops of milk. (Anna)



When mothers were unable to express breastmilk there was a sense of loss, expressed succinctly by Beth,

So emotionally it was really, really, really hard to give up that one last thing [providing expressed breastmilk] that had I been [physically] better, I could have done at least from a distance. Like if I was a regular mom and child in NICU, you can at least do that.

Every mother in this study talked about how they managed to see, talk about, care for and otherwise make connections with their babies despite the geographical separation from them. It was important to every one of them to know their baby's condition, to have input into their care and to do some of the usual tasks of mothering even if they could not be with their baby.

Connection to their baby was very important to these mothers, and they used various means to make that connection: by having pictures with them, using electronic media to view their baby through live video, by recording their voice to be played for their baby, sending articles of their clothing to their babies so they would become familiar with their mother's scent, and by calling the NICU health care providers to voice their wishes as the mother. In addition, sending expressed breastmilk to their baby was something that only the mother could provide. It was important that others knew they were the mother of that child.

#### **4.2.2 Breastfeeding, an afterthought in the ICU**

A theme that was apparent in every participant's story was that breastfeeding was not part of the realm of the staff working in critical care, as evidenced by their perceived lack of holistic care. This theme presented in the following three different ways. Firstly,

the mothers stated some health care providers did not recognize their mothering needs. Secondly, most health care providers were did not give or offer the mother any practical help with breastfeeding, (working outside their usual skill set ), and thirdly, the mothers felt like they were viewed as an inappropriate admission to the critical care unit by nursing and medical staff, because they did not require aggressive intervention while in the critical care unit. This theme was directly evident in the narratives of some participants, and more indirectly in the narratives of others who accepted critical care healthcare professionals' lack of knowledge about breastfeeding. Indeed, many of the participants did not expect health care professionals working in critical care to provide advice on breastfeeding, or milk expression technique. They expressed that although they did not expect the critical care staff to be breastfeeding experts, they would have appreciated the staff offering to assist them in achieving comfortable positions for breast pumping, especially as they all had Caesarean section incisions and critical care equipment monitoring wires connected to them; they described that they would have benefited from critical care staff providing emotional support and encouragement for breastfeeding and maintaining their lactation efforts.

But even if the nurse could have popped in a little more often just to say, "How's it going? Do you need help with the breast pump?" Because there were a few times when I was like covered in IVs and it was like this is awkward. So if they could have just popped in, maybe lent a little bit of support. (Estelle)

Anna, relayed a similar perspective about her desire for staff to offer to assist her with mobility “And here I am like dragging myself out of bed to pump and then to go to the microwave room to clean the parts.” The mothers in this study described that

breastfeeding help was considered to be something that the local maternity hospital would provide. One mother was told that “someone from the [maternity hospital] would come [to help with breastfeeding]” (Colleen), and three days passed before the mother was able to begin milk expression because both mother and critical care staff were waiting for help to come from the maternity hospital . However she was accepting of that separation of different skill sets, “I mean at the [adult care hospital], the nurses are...I mean they're not that much, I mean, educated about the breastfeeding things. I mean they're on a different line.” Other participants related this type of experience too, where the nurses either stated it was not part of their usual duties to care for postpartum patients, or did not notice the mothers’ efforts at pumping. These descriptions of mothers waiting for an maternity hospital staff member to come to provide breastfeeding help suggest that the nurses did not recognize the critical nature of timing in milk initiation, and how lactation is maintained, nor the basic principle that if milk is not regularly removed from the breast by the infant or through expression, production will eventually stop. “It was kind of an after-thought for the staff at the [adult care hospital]. I don't think they really realized how important it was or how the pumping was a part of what I needed while I was there (Anna).” Estelle provided an excellent example of a critical care nurse who was supportive “So she became my breastmilk coach ... Even if I fell asleep, she was right there to wake me up ... And it was great. It really helped lift my spirits.” This nurse, despite not being a breastfeeding expert, prompted the mother to keep up a regular pumping routine and tried to encourage her to persevere after she had to be separated from her baby for a second time.

The actions of the critical care nurses showed they did not always understand how important small amounts of pumped milk were to the mothers. “So they weren't encouraging. I had pumped maybe [one] ml, and I was like ‘I got some’, you know. And the nurse was like, ‘Well, I'm not going to send that’ (Frances)”. Another participant had to discard milk because of diagnostic tests and said

I know they weren't trying to be cold but after I'd finished pumping, they'd just dump it down the sink in my room. And it was like couldn't you have taken that away so I didn't have to watch? I would have really appreciated that a little bit.

(Estelle)

The whole process of milk production did not appear to be well understood by the critical care staff either, as one mother recounted that the medical staff suggested “Oh, we can just chat while you pump” when they were seeing her on rounds. This quotation illustrates that milk expression was seen as simply a physical task and may suggest that the lactating breast was seen as a body part, separate from the mother's emotions and mind. Diane stated “And so after I had the baby and then I found out like pumping wasn't going to be a good idea and I couldn't be doing that, I think it was kind of news to me”, indicating that her plans to express changed unexpectedly without regard for how this would impact the future breastfeeding relationship. She was told “Oxytocin, when that's released, that it could kind of affect your blood pressure. And that when I was really high risk, you know, waiting for my surgery there, they didn't want my blood pressure to get too high or too low”. Instead of health professionals trying to manage blood pressure concerns by adjusting her medications, Diane was told not to pump while in critical care and awaiting surgery. Pumping was seen as something that could be delayed and then

begun later. Mothers perceived that pumping was not seen as important by their critical care health care providers, and that their care providers may not have recognized that milk expression was how these mothers would establish and maintain a milk supply.

This theme also includes challenges related to medications and breastfeeding mothers. Frances felt she had to bargain with her medical team to be prescribed cardiac medications that were safe for her baby while breastfeeding. The medications that are typically used in cardiomyopathy patients to prevent re-modeling of the heart are contraindicated in pregnancy (Boujeily & Miller, 2009; Howlett et al, 2010). However, once the baby is born, it is common to start these patients on these drugs. As the safety of some of the newer drugs in this class in breastfeeding mothers is not known, breastfeeding is not always encouraged. However, there are older drugs in this class that have been used safely in infants (Boujeily & Miller, 2009), but they are not always the preferred choice.

And for me, now at that time I'm a mother where I'm like, no, it's okay if I take less of an important medication if I can breastfeed for the health of my child. Because that is what I had in my head. You know, if I can breastfeed for even 3 months it would be awesome. ... And then after me arguing with them and explaining myself, they were like, "Okay, well, if you can breastfeed, we'll allow you to do it for a month." And I was like, well, a month won't be good enough. I need at least 2 months. ... So here I'm bargaining with the doctor.

One participant described an experience when she was asked by her baby's neonatologist to initiate a discussion with her cardiologist, after her discharge from the critical care unit, to discontinue her current cardiac medication, and take one with a more established

safety record when used in breastfeeding infants. “It didn't make any sense because who's going to believe me talking about change this medication to that medication? That really was very stressful” (Anna). The mother felt consultation between neonatologist and cardiologist could have occurred prenatally, in collaboration with her, so she could have been discharged home on the breastfeeding friendly medication.

All of the mothers expressed how challenging pumping was, especially when their baby was not with them. It was not a choice for them, but a necessary task in their circumstances. However, there was a difference in pumping experiences among the mothers. Gina was very pleased with how easy it was to pump and get milk to her baby. She felt it was easy to carry on in a difficult situation because she was instructed on how to use the pump, and knew that breastmilk was so great for her baby and she had to do nothing but be receptive to this. She reported that if it had been too much trouble, she would not have pursued it. She described great planning and collaboration between the two hospitals and medical specialists. Another mother, who gave birth on the weekend, had great difficulty pumping because she had no instruction, except for the pamphlet that came with the pump. She was very appreciative of having the pump provided by the PCNS in preparation for the birth, but just having the pump was not sufficient. She suggested that in future there should be resource nurses, apart from the perinatal clinical nurse specialist, from the maternity hospital for the critical care staff to access to provide phone support or visits to mothers like her. She is an example of how critical care nursing staff's contacting the maternity hospital to access the appropriate resources could have facilitated access to necessary education or practical help.

Even though the mothers did not expect critical care staff to have breastfeeding expertise, they did feel that staff should have provided more acknowledgement of their new motherhood and separation from their baby. Although medically stable and essentially being monitored for potential problems, they wanted recognition of the difficulty of their situation because their circumstances were unique, when compared to typical critical care patients. As Anna put it “some of them didn't even acknowledge that I had a baby or that it was difficult to be away. Yeah, there was just that connection wasn't made by everyone”. The mothers provided examples of how appreciated that acknowledgment was “Or they were at least willing to like, you know, talk to me about it and ask me how it's going” (Diane). Another participant, Estelle, described how helpful it was to be acknowledged as more than a heart patient

...she knew I had been there, had a baby, gone back to my baby, and now I was separated again. So you know, from the moment she knew I was upset, she did put aside... She put aside the heart care for a moment to focus on my emotional health.

Some of the mothers sensed that the staff were confused about why they were in a critical care unit, and questioned the mothers taking a bed in a unit particularly when the unit was busy. The mothers sensed the workload of the nurses was heavy and did not like to ask for help for that reason. One participant said she felt like a “nuisance” because she was not as sick as other patients in the critical care unit at that time. “There were quite a few of them who were like, ‘Why is she even here?’ And I did encounter that attitude a few times” (Estelle). One mother admitted she was very teary and found that the critical care staff did not acknowledge her emotional needs. “You know, I understand they were

very concerned about my heart, concerned about the baby. But they weren't really considerate about my feelings. No one was actually asking me “how are you doing today? How are you dealing with everything?” (Frances).

The mothers had suggestions on how to improve collaboration between medical or surgical units, and obstetrics. They commented on how they believed there was collaboration going on between the specialists even though they were not included in all discussions. It was not until immediately before the birth or after the baby was born they realized that pieces had been missed that were important to them as a mother. As Diane said

I was seeing Dr. [obstetrician] on a regular basis at the [maternity hospital]. And she would kind of say like, you know, there isn't a whole lot of information on this kind of scenario but she said like, you know, you can at least try and we can at least hopefully get you pumping,

She was getting the message from her obstetrician that pumping would be possible, and then was told by her cardiologist that she could not pump. From her description, it seems that no discussion or collaboration about breastfeeding management occurred between her physicians. The mothers were surprised that key components of their care, such as medication concerns in pregnant versus breastfeeding mothers, were not addressed early on. They were surprised that the critical care unit nurses assigned to them were not always aware ahead of time that they were coming or included in preparations to support breastfeeding or milk expression or facilitate mother-baby contact.

For me, I would have appreciated even if someone from the critical care unit contacted us to ask what our intentions are like with breastfeeding. And even if



there was the offer that, "We'll try to support you. We're certainly not experts but we can help you knowing that you have support people going between 2 places.

(Anna)

And again, they have so many nurses that they can't translate to them all. But if they just... Maybe even if they had a little more heads-up, they would have felt more comfortable and things would have been less tense. (Estelle).

The absence of attention to breastfeeding and mothering was noted directly by all mothers in the study. Mothers accepted that they would not be able to rely on critical care staff for any practical breastfeeding help, such as how the pump worked, cleaning it, or teaching them anything about milk expression. The mothers adopted the view that milk expression assistance was not part of critical care staff's specialized skill set, and should not be expected. However, a number of the mothers did expect them to be knowledgeable about drug safety in pregnant and nursing mothers, and they did expect that their breastfeeding efforts would be supported by assisting with positioning for pumping. They expected that the importance of breastfeeding would be recognized and that breastmilk expression would have been considered an important part of their care plan. Instead, breastfeeding was treated as something that could wait until the PCNS was available, or until the mother could manage it on her own. It seemed unimportant in relation to other care needs and monitoring.

#### **4.2.3 Surviving pre-empts breastfeeding**

Every mother in the study was concerned about her own health and about being able to mother their baby in the future. None were willing to risk their own, or their babies', lives or health in exchange for breastfeeding. All the women in the study

understood that they needed to be healthy in order to have a chance to breastfeed and care for their babies and families. Breastmilk was the first choice for feeding their babies. But given the separation and the uncertainty of their own health, the mothers gave instructions to the maternity hospital staff caring for their babies to give the babies whatever was necessary in their absence. This included formula supplementation and pacifiers. One participant would have liked the opportunity for her son to receive banked human milk instead of formula, for the health benefits for her baby, particularly because he was born preterm. The process to procure banked human milk for her son was too difficult for her to pursue at that time due to her own health issues and surgery after his birth, and there was no local milk bank available at that time. She felt mothers in her situation should have access to banked milk since human milk is the standard in infant feeding. She thought a milk bank could serve as a bridge to mothers who are ill for a short time but who could eventually breastfeed.

With their end goal of being healthy and being reunited with their baby, the mothers had to let go of many of the normal mothering tasks and had to mentally prepare that breastfeeding might not be a reality for them. “I just wanted him to be healthy. I wanted me to be healthy. Breastfeeding would have been a bonus but it wasn’t something that we kind of put all of our eggs in that basket” (Anna).

And I wanted that to be my first choice. But I was prepared that if the separation or if anything happened to her in the NICU was going to make that impossible, I was going to let it go quickly. Because of my tough time at the beginning with breastfeeding my first child. (Gina)

One participant (Beth) explained her decision about stopping milk expression quite clearly:

Maybe I could have done more but for me, it's what I felt comfortable with.

When that was done then it was time to re-prioritize. Now I need to work on getting myself better and recovering and getting my own emotional head ready to think I'm going to get through this, I'm going to heal, I'm going to get better, and I'm going to be a mom to my kids and a wife to my husband and a daughter to my parents and a sister to my brother, and all the other things I want to do in life.

You know, so there was one mindset before and then there's the mindset I was in right before the surgery, and then there's the mindset recovering. So it changed priorities depending on where I was in the stages of what I experienced.

Diane felt she had to put breastfeeding aside at one point when she had a surgical complication in order to protect her future with her child and to be able to care for her adequately “It's just all of my energy went into like... because I was just so worried that like what kind of mother am I going to be if I'm not like with it mentally?”

Two of the participants related how they used planning as a way to mentally and emotionally manage the stress of their pregnancy and their time in critical care.

The plans kept me going ... So I was like if I just keep making little plans, if anything happens, it's not going to feel as devastating because I've given it some thought and I've had the chance to let that horrible feeling of devastation pass.

(Estelle)

One of the mothers described the planning process in this way

It's one of those things that because it was very staged, we had to get through... First you had to figure out, okay, yes, I wasn't making it up, there's something wrong with my heart. Then you have to get the different specialists involved to see how long I can wait until I have surgery. And then you have to get through the preparing for having a premature baby. So I think I was just sort of jumping through and I didn't really plan until I needed to plan (Gina).

The mothers in this study were all in agreement on this theme, that they would not breastfeed at any cost. They would not have gambled with their own health by not following medical recommendations; however, they did feel in some cases there was room for discussion around medications, finding the right drug for both mother and baby. The mothers were all aware that the critical care staff were focused on the mothers' critical care or medical needs and problems, and breastfeeding concerns were not their priority.

#### **4.3 SUMMARY**

The three themes identified from the participants' descriptions of their experience of breastfeeding while in critical care illustrate how arduous it was for these mothers to try to meet their goal of breastfeeding this baby. Prior to the birth of their baby, all seven women in this study had intended to breastfeed their infant. However, only four were breastfeeding at the time of postpartum discharge from hospital, with or without supplementation with formula. It is noteworthy that three of these four breastfeeding mothers had no medical complications or surgery during their stay in critical care. Despite the challenges, all said they would try to breastfeed again with subsequent pregnancies, reinforcing how important breastfeeding was to these mothers. The

experiences depict a mother trying to do the best for her baby, to breastfeed and mother him or her in a precarious situation, and in an unfamiliar environment.

In the case of “Breastfeeding, an afterthought in the ICU” the mothers did not always spontaneously identify any problem with the nursing or medical care and support with regards to breastfeeding. However, in my role as interviewer, I asked the mothers to expand upon how the staff helped them with breastfeeding and this discussion revealed gaps in provision of breastfeeding-related care. For example, Colleen described how she did not begin milk expression until the third postpartum day because she was waiting for the PCNS to come and help her with pumping. She did not find anything unusual about this, and when asked, stated that the critical care nurses were helpful, but also that they had not asked her about milk expression. The nurses could have been proactive in asking this mother about her breastfeeding intentions and offered to help get her expressing milk sooner when she was medically stable and able to express. In some cases, the nurses chose to leave anything to do with breastfeeding to the maternity hospital staff, deferring and delaying initiation of pumping until the PCNS was able to come to unit and help the patient. In effect, they did not address that care need, perhaps because they did not recognize it, or they felt it was not their job, or because they felt ill equipped to assist the mother. In most cases the mothers just waited for the maternity hospital staff to come. The mothers’ recognized that the critical care nurses were not familiar with breastfeeding and they did not want to ask for something that was not reasonable to expect given the nurses’ usual patient population.

## CHAPTER 5 DISCUSSION

### 5.1 PARTICIPANTS

Seven women participated in the study “The meaning of the breastfeeding experience for mothers in critical care”. They ranged in age from 28 –37 years at the time of the birth, with some cultural diversity. The majority of the mothers in this study, as previously stated in the findings, were admitted to critical care for cardiac conditions. This is in contrast to most of the literature around critical care of postpartum women. In the literature, the reason for admission to critical care was for an emergency situation, usually postpartum hemorrhage or hypertension. For four of the seven mothers this was their last child. Consequently for these women admitted to a critical care unit, it was largely their only or last opportunity to experience breastfeeding.

The findings of this study were captured in three themes: *Separation from my baby*; *Breastfeeding, an afterthought in the ICU*; and *Surviving pre-empts breastfeeding*. The study participants had all planned to breastfeed their baby, and during the interviews described breastfeeding as way to feed their child. From their descriptions of their experiences, breastfeeding also appeared to be a way of mothering their child.

### 5.2 SEPARATION FROM MY BABY

The study participants were all able to see their baby at birth, at least briefly, but most either had no, or very limited, physical contact before they were separated, and while the mothers were cared for in critical care units in a general hospital, each of the infants were transferred to a children’s and maternity hospital. Only three mothers in this study were able to have any skin-to-skin contact with their newborn after birth, and only one of these had that contact immediately after birth, albeit briefly. Best practice for skin-to-skin contact between a stable mother and her stable newborn immediately after birth is

at least one hour, uninterrupted (BCC, 2011; CPS, 2015; Moore et al., 2012; Young, 2010). The remainder of the mothers in the study did not hold their babies until days later, when they were able to travel to the maternity hospital or the baby was physiologically stable enough to be brought to them for a visit. Despite best practice recommendations for skin-to-skin contact, the mothers in this study provide evidence that it did not happen following the majority of the births. Physical separation of mother and baby definitely impacts the woman's ability to mother her baby. The mothers in my study talked about how difficult it was to not hold their baby right away, and expressed feelings of loss and loneliness after being separated from their babies. These descriptions about the difficulty of separation were repeated by all mothers and formed the basis of this theme. The period right after birth can be a special time for mothers and babies, when mothers instinctively want to hold, talk to and gaze at their new baby (Feldman et al., 2007; Klaus & Kennell, 1976; Mercer, 1995, 2004, 2006; Rubin, 1984). Babies respond to their mothers reciprocally with gaze and vocalizations as they are becoming more attached to their mothers (Feldman & Eidelman, 2007; Mercer, 1995). Babies who are held skin-to-skin by their mothers immediately after birth benefit from improved temperature and blood glucose control, and cardiorespiratory regulation (CPS, 2015; Moore et al., 2012).

It was hard for the mothers to realize that other family members had held their baby before them. The maternal loss of being the first one to hold the baby has also been reported by Elmir et al (2011), in their study on early mothering experience after emergency hysterectomies. There is evidence from studies of healthy mothers separated from their babies who were in NICU that they had similar experiences, of not feeling like

a mother until she could hold her baby (Fenwick et al., 2008; Klaus & Kennell, 1976; Lupton & Fenwick, 2001; Reid, 2000). The loss of “firsts” like feeding, or changing a diaper, was also noted by Hinton, Locock and Knight (2015) in their study on postpartum mothers in critical care.

The mothers in my study all expressed how they missed their baby while separated, and they voiced concern for what this early separation could mean for their relationship. One mother stated that she worried her baby would not love her because of that initial separation. Elmir et al (2011) found “initial separation-lost bonding time” to be a theme of the women’s experience in their study on emergency hysterectomy following postpartum hemorrhage, which is similar to the mothers in my study. Contrarily, other studies on postpartum mother’s experiences in critical care have included mothers who felt little interest in their newborns because of their own medical condition (Benn & Minton, 2008; de la Cruz et al., 2013). Evidence from a study on mothers’ experiences of a scheduled caesarean section shows a mother can feel a loss of connection to her baby because of the initial physical separation (Bayes, Fenwick & Hauck, 2012). The mothers in the study by Bayes et al. were first time mothers scheduled for a caesarean section because of a pre-existing condition, and they were separated initially for a few minutes, while the baby was examined, then able to hold them swaddled for a few minutes, until the baby and the other parent were moved to the postpartum area. It was approximately an hour before the mother was returned to her baby and family. Although attachment behaviours are increased in mothers and babies who practice early skin-to-skin contact after birth (Bigelow & Powers, 2012; Feldman et al., 2014), there is evidence that mothers and babies who have had a medically necessary



delay in physical contact, due to factors such as preterm birth, can still go on to form an attachment (Aagard & Hall, 2008; Bialoskurski, Cox & Hayes, 1999; Korja, Latva & Lehtonen., 2012; Zabielski, 1994). Being able to see the infant after birth, as the mothers in my study did, even if they are unable to touch the baby, is helpful for continuing the attachment process (Bialoskurski et al., 1999; Mehler et al, 2011; Mercer, 1995). Mothers receive messages that early physical contact, and particularly skin-to-skin contact, is important for attachment, from family, friends, health care providers, and from print or online educational materials designed for expectant parents. When mothers expect they will have early contact with their baby and believe it is necessary for attachment, they may experience maternal distress when they cannot follow through because of their health condition. Mothers who are separated from their babies emergently after birth also need reassurance they will be able to form a future attachment with their babies (Berg & Dahlberg, 1998; Elmir, Schmied, Wilkes & Jackson., 2010; Elmir et al., 2011; Harvey, 1992). Nurses caring for postpartum mothers can support the process of becoming a mother by using empathy, asking the mother what her concerns are, being interested in the mother and the baby and facilitating connection between mother and baby (Karl, Beal, O'Hare & Rissmiller, 2006; Mercer, 2006).

The mothers in my study described how separation prevented them from performing the usual tasks of caring for their babies such as feeding and bathing, in the early days after birth. Being unable to care for their infant can affect the woman's attachment to her baby and her progress in becoming a mother. The first three to four weeks is normally the time when a mother learns about her infant, begins to care for her infant, and starts to identify as a mother (Mercer, 1985, 1995, 2004; Rubin, 1967a, 1984).

The mothers in my study were forced to rely on others to care for their baby in their absence. This is similar to the theme of “relinquishing care of the infant”, identified by Elmir et al. (2011), and is consistent with Lindberg’s & Engstrom’s (2013) discussion of infant care being assumed by the father, other family members, and the neonatal unit, when the mother is admitted to an ICU. Healthy mothers with a premature or sick infant admitted to a NICU have also described their experiences of having to rely on others to care for their babies, and feeling like a stranger to her baby rather than a mother (Aagaard & Hall, 2008; Flacking et al., 2006; Nystrom & Axelsson, 2002; Reid, 2000). The progression towards achieving a maternal identity is delayed when a mother cannot be with her infant, and care for her infant as is typically done (Bialoskurski et al, 1999; Mercer, 1995, Rubin, 1984; Zabielski, 1994).

Breastfeeding may be affected by early separation, especially if there is the loss of skin-to-skin contact between mother and baby immediately after birth, as there was with the women in my study. The physiology of lactation relies on frequent contact between mother and baby to establish and maintain a milk supply, so can be interrupted by separation of mother and baby. If frequent contact is impossible, lactation will have to be established and maintained by the mother expressing breastmilk at regular intervals (BCC, 2012; WHO, 1989, 2009). Uninterrupted skin-to-skin contact immediately after birth is Step 4 of the WHO ‘10 Steps for Breastfeeding Success’ and has been demonstrated to improve breastfeeding success and duration (Chalmers et al., 2009; Moore et al., 2012). The women in my study provide evidence that breastfeeding success was challenged by both the loss of skin-to-skin contact after birth and by delays in breastmilk expression.

None of the mothers in my study were able to have their baby in their room in the critical care unit. Step 7 of the WHO '10 Steps for Successful Breastfeeding' (1989, 2009) states that mothers and babies should be together 24 hours a day (Chalmers et al, 2009; Kramer et al, 2001; Murray, Ricketts & Dellaport, 2007; WHO, 1998), as this proximity allows the mother to learn and respond to her baby's feeding and other behavioural cues. Participants in qualitative studies of women's experiences of breastfeeding following postpartum hemorrhage (Thompson et al. 2010) and following an emergency hysterectomy (Elmir et al 2011) have cited separation from their babies as one reason for difficulties initiating and maintaining breastfeeding. Because keeping mothers and babies together is a known factor for breastfeeding success, it is also being advocated for in NICU's where mothers and babies have typically not able to remain together 24 hours a day. (Nyqvist et al., 2013). Unlike some women who require intensive care after giving birth due to a sudden and unexpected health event, the majority of the mothers in my study were aware in advance that they would need this type of care and may have had some time to prepare; none-the-less, these mothers still experienced psychological struggles in dealing with the separation. The mothers described trying not to think about the separation, and instead focused on getting well enough to be reunited with their baby. They spoke about how they dealt with the separation, almost as if they put mothering on hold, which is similar to what some mothers of preterm babies are reported to do when they are separated because of NICU admission (Brazelton, 1981; Flacking et al, 2006; Nystrom & Axelsson, 2002; Mercer, 1995; Reid, 2000).

Preparing for birth is a natural process for mothers (Darvill, Skirton & Farand, 2010; Mercer, 1985, 1995, 2004; Nelson, 2003; Rubin, 1976, 1984). The mothers in this

study, as part of their birth preparation and impending separation from their baby, arranged to have family members available for the birth to accompany the baby to their unit. Some mothers also made contact with the NICU, or had a tour of that unit during their pregnancy, and were connected with the PCNS before the birth. This study appears to be only one I am aware of, other than Engstrom and Lindberg (2011) in which the importance of mothers' preparation is described in relation to their experiences in critical care. Mothers in that study reported being prepared for an imminent complicated delivery, but being anxious about the situation. However, preparation for separation appears to be a unique finding in my study, previously unidentified, perhaps related to the previously diagnosed health problems that lead to the critical care unit admissions in my study sample.

While pregnant, Estelle searched out peer opinion on breastfeeding as a purposeful method of preparing herself for infant feeding. Campbell, Wan, Speck & Hartig (2014) showed prenatal peer support's beneficial effect on breastfeeding initiation. Peer support's positive effect on initiation, duration and exclusivity has been shown in a study by Rozga, Kerver & Olsen (2015). Both studies were done with samples of low income women, which is different from my study where level of income was not an inclusion criterion. Again, being able to prepare for breastfeeding knowing they would be separated from their babies, in different hospitals, is unique to my study and offers a consideration for how preparation time could be used to smooth the breastfeeding experience for these mothers in the postpartum period. It also offers an opportunity for staff in critical care units to be updated on postpartum care, knowing that a postpartum mother is to be a planned admission to the unit on a specific day. Participants in my study

related how they did not always know what were considered normal amounts of expressed breastmilk, or why milk production might be slow in the beginning, or that continued production depended on regular expression. Graffy and Taylor (2005) studied what women wanted for breastfeeding help, and one of their themes was “information about breastfeeding and what to expect” Prenatally, the mothers in their study felt more preparation would have made it easier to persevere during difficult times. Hannula et al. (2008) found in their systematic review of professional support interventions for breastfeeding, that interventions that began in pregnancy and continued through the hospital stay and into the postpartum period after discharge, were the most effective at increasing breastfeeding initiation and duration. During pregnancy, interventions that were interactive (with conversation or experiential elements), rather than strictly instructional, were more effective. Individualized support for groups who had fewer breastfeeding supports, or for more complex patients, increased breastfeeding initiation and duration. Peer support was noted to be particularly effective within groups who had specific needs, such as for young mothers or immigrants. Mothers in my study definitely had more complex needs regarding breastfeeding information and support; they all could have benefitted from breastfeeding support that began in pregnancy, and continued through their hospitalization into the postpartum period. The mothers in my study found it difficult to attend prenatal classes because of their many medical specialist appointments, and in some cases, their antenatal hospitalizations. Prenatally, they used written materials from public health, the internet, their obstetricians, and the perinatal clinical nurse specialist to access information on breastfeeding.

Two of the mothers in my study mentioned that they either accessed peers for support or wished that peer support had been facilitated for them to cope with their hospitalization and breastfeeding. Postnatal peer support has been shown to be effective at increasing breastfeeding duration (Dennis, Hodnett, Gallop & Chalmers, 2002; Hannula et al., 2008). Step 10 of the WHO 10 Steps to Successful Breastfeeding (1989, 2009) is to provide mothers with contacts in their community for breastfeeding support, including peer support. Peer support has been used successfully in the NICU from an experienced breastfeeding NICU mother to newer mothers, (Meier, Engstrom & Rossman, 2013) and to help new mothers adjust to motherhood while their babies are in the NICU (Rossman, Green & Meier, 2015). However, medically complex women do not appear to have been included in the research on postnatal peer support's effect on breastfeeding. Peers as models for mothering, as noted by Rubin (1967b), is part of the process of becoming a mother. Some women in my study sought out peer support while one other wished she had as part of prenatal preparations.

A common theme found in every study participant's experience was finding a way to connect with their baby being cared for in another hospital. The mothers' ample and detailed descriptions of how they established a connection with their baby while not being with the baby, provide support and evidence to separation as a theme in this study. The sub-theme of "creative connections" substantiates facilitating and promoting mother-infant connection as a necessary part of caring for postpartum mothers in critical care. Mothers and babies learn about each other as part of the acquaintance stage of becoming a mother, through looking at each other, touch, vocalizations, and movement in response to speech (Bowlby, 1969; Feldman et al., 2007; Klaus & Kennell, 1976; Mercer, 1995,

2004, 2006; Rubin, 1984). The mothers in my study used photographs, digital photographs and video conferencing to see their babies. They also used these photographs to show their baby to others, for example, the nursing staff in the critical care unit. They take this time to identify and claim the baby as their own (Rubin, 1967b). The participants in my study told me about how they used conversations with family, friends and the NICU staff to connect with their babies and learn about them. One mother also sent self-recorded books to her son so he would hear her voice. Participants described similar feelings of how helpful it was to receive updates on their child as a way of feeling more like the baby's mother, because she could then talk about the baby in a knowledgeable way to others who had not yet met the baby. A mother wants to be the expert on her baby, as she works towards obtaining her maternal identity (Fenwick et al., 2008; Mercer, 2004; Rubin, 1984), and the mothers in my study used the visual and verbal updates from family and health care providers to learn about and continue attaching to their baby. Authors have previously reported that postpartum women hospitalized due to serious illness and separated from their baby had an intense need to know about that baby (Engstrom & Lindberg, 2011; Harvey, 1992; Hinton et al., 2015; Watson et al, 2013).

The most common way mothers were able to physically connect to their babies without being with them was by expressing breastmilk to be sent to the maternity hospital to be fed to their baby. The mothers in my study felt that providing expressed breastmilk was the one thing they alone could do to care for their baby when separated. It was seen as a physical connection to their baby, and as something they could do as a mother. There have been studies about the meaning of expressed breast milk for mothers whose baby is

in neonatal intensive care. NICU mothers have described their providing expressed breastmilk as being an emotional connection to their baby (Rossman, Kravotil, Greene, Engstrom & Meier, 2013; Sweet, 2008), enabling them to feel like the baby's mother, to start performing a mothering role. However, there has been little study about the meaning of expressed breastmilk to mothers who are unable to feed their baby at the breast because of serious maternal illness. The mothers in my study clearly provide evidence that supplying expressed breastmilk for their babies helped them feel like their baby's mother, and enabled them to feel connected while they and their baby were physically separated.

### **5.3 BREASTFEEDING, AN AFTERTHOUGHT IN THE ICU**

Mothers in this study described instances where breastfeeding initiation through mechanical expression of breast milk was not recognized as a care need for the mothers, or was not supported by the nursing or medical staff in the critical care unit. On occasion, their need for help and support with establishing and maintaining a milk supply was recognized by critical care staff, but considered to be outside of the domain of critical care and left for visiting maternity specialists to coordinate and facilitate. The babies in my study were all separated from their mothers, and most were premature. As a result, the mothers needed to express breastmilk while in critical care, in order to establish their milk supply and maintain it for a baby that might not be able to nurse at the breast for some time. Every mother in this study had a Caesarean section birth, a major abdominal surgery. After the birth, mothers experienced pain and difficulty moving. Some participants expressed they would have liked some nursing help to mobilize and get into a good position to pump, but did not get the help they were looking for. This experience of



mobility and positioning problems barriers to breastfeeding was also noted by women who had a hysterectomy after postpartum hemorrhage (Thompson et al., 2010). Wishing for more help with breastfeeding from critical care nurses was also found in the studies by Hinton et al. (2015) and Thompson et al.

Three of the mothers in my study also described that they felt critical care staff viewed them as an unnecessary admission to critical care, as that they were not as sick as other patients. The mothers reported feeling like “a nuisance” to some staff. Participants stated that they heard nurses question why a patient was taking up a critical care bed when they were not as sick as others. Nurses left them to manage on their own with milk expression because there were sicker patients in the unit. These mothers wanted to be acknowledged as patients who had both critical care needs and needs related to their new mother status and being separated from their babies. This finding is consistent with those from previous studies, specifically Berg and Dahlberg’s (1998) study of mothers’ experience of a complicated childbirth, in which they identified a theme of mothers needing “to be seen”, and Engstrom and Lindberg’s (2011) finding that mothers admitted to an ICU after a complicated childbirth considered that they may not have been as sick as others in ICU and felt they were not as important as the sicker patients. Studies on complicated birth discuss negative emotions that can result when mothers feel invisible, or ignored (Elmir et al., 2010; Engstrom & Lindberg, 2011; Furuta et al., 2014). The mothers in my study certainly expressed that they were left with negative feelings about care providers when they felt dismissed as a patient and ignored as a new mother.

The participants in my study did not expect the critical care staff to have specialized knowledge or practical skills around postpartum care including breastfeeding.

A couple of mothers suggested that because of how hospitals are organized in Halifax, where there is a dedicated maternity care facility, they had no expectation of maternity care outside of that facility. In fact, both Beth and Gina expressed they would not have been confident about the accuracy of direct breastfeeding advice from staff outside of the maternity hospital, as the critical care staff were not lactation experts. All the mothers in this study reported that critical care staff acknowledged that providing postpartum care was a rare occurrence, and something they were not familiar with. For the most part, lactation support was left for the PCNS from the maternity hospital to provide. This can cause a delay in beginning milk expression if that one dedicated staff member is not available on the day the mother gives birth, and emphasizes the need for critical care staff to have accessible resources to help a postpartum mother begin milk expression. In review articles focusing on clinical practice, Dauphinee, Amato and Kiehl. (1997) and Watson et al. (2013) report that providing obstetric care and breastfeeding support is challenging due to unfamiliarity in critical care settings. Research studies on nurses' experiences of caring for postpartum mothers in the ICU showed that the nurses did not always feel comfortable or knowledgeable enough to care for postpartum needs like breastfeeding support (Engstrom and Lindberg, 2013 ; Kynoch et al., 2010a). The hemodynamic needs of the patient were prioritized above all else, and breastfeeding and care of the family received little attention. Nurses in these studies felt postpartum care was best done by midwives or other obstetric staff, and should not be part of their responsibilities. Engstrom and Lindberg (2013) further reported that the nurses did not always feel that the ICU was the proper environment for the postpartum patient, due to a

lack of privacy, and concerns about who was responsible for the family and baby if they were present in the ICU.

There were issues with mothers in my study receiving conflicting advice from physicians about the mother's ability to breastfeed and whether certain medications were safe while breastfeeding. Although six participants had scheduled births, allowing for time to collaboratively plan how breastfeeding and medications would be managed, this specific type of planning did not happen. Mothers in my study believed that when the specialists consulted with one another about their health problems and clinical management, consideration of all relevant aspects of care – including breastfeeding – would have occurred. However after the birth, these women realized and stated in their interviews, that they perceived breastfeeding was not well understood or acknowledged by the physicians directing care in the critical care unit. The mothers were often given different opinions on whether breastfeeding would be possible for them by their obstetricians and their medical specialists. In some cases, the information changed right before or after the birth, which was upsetting and left little time for the woman to prepare mentally for the change. This is noted in the literature as well; Thompson et al. (2010) stated that the mothers in their study reported needing less conflicting, and timelier advice and support than they had received. Most medications can be used safely in breastfeeding mothers, (CPS, 2015; Health Canada, 2015; Rowe, Baker & Hale, 2013; WHO, 2002). Choosing medications that are compatible with breastfeeding could have been done prenatally so that uncertainty about whether the breastmilk was going to be safe for baby would have been avoided. For example, one class of cardiac medications, angiotensin-converting-enzyme (ACE) inhibitors, which are used to treat hypertension

and congestive heart failure, are discontinued in pregnancy because they are teratogenic to the baby (Howlett et al., 2010; Regitz-Zagrosek et al., 2011). However, some ACE inhibitors are compatible with breastfeeding (Brochet & Ito, 2014; U.S. National Library of Medicine, 2015; Regitz-Zagrosek, 2011), but this does not seem to translate in the clinical setting. There still appears to be uncertainty among cardiologists about the safety of the breastmilk for the baby if the mother resumes an ACE inhibitor, so the mothers are often discouraged from breastfeeding for that reason. Two mothers described this very situation with ACE inhibitor use in their care plan. Because the critical care physicians were focused on their particular area of specialty practice, their usual medical protocols, such as use of certain medications, appears to have been maintained. In fact, some mothers in my study described that their cardiologist directly stated that it was more important for them to take their cardiac medications than it was for them to breastfeed. The mothers recognized that the critical care physicians were focused on the health issue that had necessitated their admission to unit, and the maternity aspects appear to be secondary to all else. The lack of collaboration between medical specialists and sudden changes to breastfeeding care plans that the mothers described all add to the foundation of this theme, Collaboration of the critical care medical and nursing staff with the maternity unit is a necessary link for the mother's care in a critical care unit (Campbell & Rudisill, 2006; Engstrom & Lindberg, 2013; Kynoch, Paxton & Chang, [Abstract] 2010b; Thompson et al., 2010).

Critical care units are specialized areas where the sickest and most complex patients receive care. This environment is noisy, fast-paced, and technological, and the nursing and medical staff are trained to provide care in managing a crisis, physiologically

stabilizing a patient, and being vigilant to prevent physiologic deterioration in the patient. Normal postpartum care of a woman and breastfeeding are not typical adult critical care skills; and critical care staff may have little experience with it and their knowledge of postpartum care may be limited to their nursing or medical school education, with no updating since. Women in my study stated as much, noting that, the critical care staff were open with their unfamiliarity about postpartum care. Promoting maternal-infant attachment and supporting breastfeeding is also not a priority in the ICU (Harvey, 1992). As stated by Pollock (2006) “Critical care nursing and midwifery [maternity care] are quite separate domains of practice, with little overlap of knowledge or skills” (p. 61). In my experience as a bedside nurse, I have seen health care providers become so comfortable with specialty areas that they are reluctant to cross over into another area sometimes because they do not feel competent, or because of high workloads, or because they believe it is truly “not my job” to deal with any problem outside of their specialty. This is also noted in the studies by Engstrom & Lindberg, (2013) and Kynoch et al, (2010a). Lack of confidence in critical care nurses in providing postpartum care, and unwillingness to expand their skill set to include postpartum care, was also reported by Kynoch et al (2010a) and Engstrom and Lindberg (2013).

Health care providers rely on consultations to health care professionals in other specialty health services to meet patient care needs outside of their area of expertise. For example, if a patient in a critical care area has a gastrointestinal bleed, the appropriate service, gastroenterology, is consulted swiftly and the patient receives that specialized care in relation to the urgency of that need. The difference in the case of postpartum mothers who are in critical care areas is the urgency for breastfeeding help does not

appear to be recognized. The mothers in my study reported delays from birth to the initiation of milk expression. Their description of delays indicates a lack of recognition of the need to initiate breastfeeding or pumping in terms of hours, not days, in order for the mother to have a reasonable chance of establishing and maintaining a milk supply and being able to breastfeed to some degree.

#### **5.4 SURVIVING PRE-EMPTS BREASTFEEDING**

The mothers in this study were all very clear that providing breastmilk to their baby was important to them, but surviving was the more important priority so that they could have a future in which they could mother their child. There is literature that mothers with complicated childbirth or chronic illness have reported their biggest concern was to survive so that their children could grow up with their mother (Elmir, Schmied, Jackson & Wilkes, 2012; Furuta et al., 2014; Vallido, Wilkes, Carter & Jackson, 2010). The mothers in this study adhered to the medical preparations for a planned birth in a facility where they would be separated from their baby, and for admission to a critical care unit for subsequent monitoring or to await surgery. The mothers all expressed appreciation for the preparations and care undertaken to help them achieve a safe birth, where the goal of the care was a healthy mother, balanced with the longest gestation possible for the baby. The mothers trusted the health care providers that were caring for them and adhered to protocols to monitor their complicated pregnancies. The one mother who expressed negative feelings about her pregnancy and experience while in the critical care unit, still trusted that the staff were focused on the best care for her heart, trying to avoid any further damage. Her negative feelings about her time in critical care were a result of a breakdown in communication. Good verbal or non-verbal communication,

even in emergency situations, can make a woman feel more positive about the experience and trust her health care providers (de la Cruz et al., 2013; Engstrom & Lindberg, 2011; Furuta, et al., 2014) Trust in the health care providers can contribute to a positive maternal experience, despite a complicated birth in the study (Berg & Dahlberg, 1998).

The mothers in my study all recognized the seriousness of their own health conditions because they had symptoms that impacted their daily life while they were pregnant. All of the mothers stated that their pregnancy was stressful due to the uncertainty of progression to delivery. There was a proposed delivery date for each of the planned births, but they always realized that it could change if the mother's or baby's condition deteriorated; this did happen with Diane and Frances. This level of uncertainty in the pregnancy because of the mother's medical condition is consistent with published literature on maternal experience of high risk pregnancies (McCain & Deatruck, 1994; Mercer, 1995; Stainton, Harvey & McNeil, 1995). The maternal tasks of "ensuring safe passage" and "giving of oneself" are heightened in mothers with complicated pregnancies (Mercer, 1995; Rubin, 1984).

The mothers in my study all ensured safe passage through their juggling of many appointments with health care providers. As a result, prenatal classes, through which they would have received information and support for breastfeeding, were not always possible for them. The mothers described how medical appointments superseded attending prenatal classes and formal preparation for breastfeeding. Their preparation for birth and mothering was more complex than the preparations of a healthy mother. These mothers did what they needed to do at the time to preserve their own health, and to plan for an early birth and potential complications for the baby. The mothers with the planned births

described an altered pregnancy, not what they considered a “normal” pregnancy, with increased surveillance of their condition. Some expressed it as a loss to have had a complicated pregnancy. Some who knew their baby would be born prematurely were able to make contact with the NICU prenatally and make their breastfeeding wishes known or have a tour of where their baby would be cared for. When mother and baby are separated because of preterm birth, the mother has not finished the maternal tasks associated with pregnancy (Mercer, 1995; Rossman et al., 2015; Rubin, 1984). It is common for mothers who give birth preterm or have a baby in a NICU to grieve, for the loss of a normal pregnancy, the losses of certain milestones of pregnancy, and the loss of the hoped for healthy child (Klaus & Kennell, 1976; Mercer, 1995; Nystrom & Axelsson, 2002; Rubin, 1984). The mothers in this study talked about stress during the pregnancy and the difficulty with antepartum hospitalization. But they accepted the increased medical care as something they really had no choice in, and did this willingly so that they and their baby would have the best chance of being healthy. This finding is consistent with findings of McCain and Deatrick (1994) and Stainton et al. (1995), whose study participants also recognized that their pregnancy was different, and noted missing out on having a typical healthy pregnancy and preparation period. Frances explained that she thought it would have been beneficial for her if she had been able to talk to other mothers who had complicated pregnancies to share experiences and support: ‘as a mother-to-be or a mother that just had a baby, it would be nice for somebody like me who was pregnant and had no clue what was going on to hear, “I can get through this”’. Peers would have been helpful for her to manage her difficult pregnancy. Peer support has also been shown to be helpful for mothers with antenatal depression (Raymond, 2009) and in mothers on



bedrest for preterm labour (Adler & Zarchin, 2002). Mothers find group antenatal care where peers can share information and socialize to be a highly satisfying way to prepare for birth and parenting (Catling et al., 2015).

Every one of the participants in my study wanted to breastfeed, but only if it could be done safely for themselves and their babies. There was uncertainty around what medications some mothers would need after birth, and whether these medications would be safe for their breastfeeding babies. The mothers wanted health care providers to consider adjusting their medications to more breastfeeding friendly choices when possible, even if it was just for a few months. One mother was discouraged by the degree of negotiating required with her physicians to strike a balance between her taking necessary medications and her breastfeeding goals. Anna was put in the stressful situation of having to initiate a change of medications, after she had been discharged home, instead of the neonatologist contacting the cardiologist directly. Having control and input into their medical care was important to these mothers, and being included in clinical management plans resulted in more positive experiences for study participants. A sense of control is vital to the experience of a mother during a complicated childbirth, as it is during a normal pregnancy, and also during the postpartum period (Berg & Dahlberg, 1998; Elmir et al., 2010; Engstrom & Lindberg, 2011).

Two participants in my study were physically unable to continue pumping, one because of their post-operative health status. They indicated that although breastfeeding was important, they were willing to put it aside to focus all their energy on regaining their physical health. This inability to carry on with breastfeeding because of the physical trauma from birth or the exhaustion that follows, has been also well-described by other

researchers (Beck & Watson, 2008; Benn & Minton, 2008; Elmir et al., 2011; Hinton et al., 2015). Four of participants in my study mentioned emotional difficulties while breastfeeding that influenced their pumping efforts and the overall breastfeeding experience. Two of the mothers were discouraged by the small amounts of milk they could express and problems latching on, and two of the mothers had a difficult breastfeeding experience with their first child, definitely influencing this second breastfeeding experience. For example, Gina had a difficult breastfeeding experience with her first child, and decided early on that breastfeeding would not be done at the expense of her emotional wellbeing and her overall mothering experience. Estelle also had a difficult breastfeeding experience with her first child, and decided partly for emotional wellbeing reasons, and partly because of her perceived milk supply issues, that she needed to wean this second baby after two months. Diane put pumping on hold at one point after a physical complication postoperatively while in the IMCU, that affected her cognition. Her bigger concern became her emotional fitness and how she would mother her child if she was not cognitively sound? Frances spoke about how her pumping efforts in critical care were impeded because she found it impossible to relax when pumping with limited privacy in that environment. The literature on complicated or traumatic childbirth contains similar findings, that low milk supply and latch problems can be discouraging enough for women to give up breastfeeding (Beck & Watson, 2008; Brown & Jordan, 2012; Elmir et al., 2011). Breastfeeding is more than the physical process of providing milk for the baby; there is a psychological component to it that can impact the mother's success (Burns, Schmied, Sheehan & Fenwick, 2010; Guyer et al., 2012; Manhire et al., 2007; Marshall, Godfrey & Renfrew, 2007; Sheehan, Schmied & Barclay,

2010). Mothers in this study who were unable to reach their breastfeeding goals expressed regret and loss, a sentiment echoed by mothers in other studies as well (Beck & Watson, 2008; Elmir et al., 2011; Thompson et al., 2010). The mothers in my study were very practical about how breastfeeding might work, or not, in their particular situations. They described how they prepared for the birth and breastfeeding, hoping for the best, adjusting as needed along the way and putting surviving ahead of all else.

## **5.5 SUMMARY**

Intention to breastfeed is known to be a positive predictor of breastfeeding success, (Lutsiv et al., 2013; Stuebe & Bonuck, 2011) and all the mothers in this study had the intention to breastfeed. The fact that the majority of these mothers had planned births and subsequent admissions to a critical care unit should have made their breastfeeding goals easier to attain than if they had been emergency admissions, but there were steps that were missed. Participants noted a prenatal focus on preparing for a complicated birth and potential maternal problems postpartum, but this did not include the step of lactation preparation, such as learning how to use a pump, how much milk to expect, or how to access help if the PCNS was not available. The critical care unit health care providers missed opportunities to support mothers in their breastfeeding efforts, by not recognizing their needs, or by not acknowledging them as new mothers in the difficult position of being separated from their baby. Of course, there will always be situations where breastfeeding cannot work because of significant maternal or infant complications; however, several of the mothers in my study had no such complications and it was still problematic for them to begin breastfeeding.

## **CHAPTER 6 CONCLUSIONS**

The meaning of the breastfeeding experience for women in critical care was the focus of this interpretive phenomenological study. In this study, seven women described their experience of trying to become a breastfeeding mother while they were hospitalized in a critical care unit in an adult care hospital and their newborn baby was being cared for in a different hospital. All but one of the mothers in the study sample had a planned birth, and most had cardiac conditions. However they varied in other ways; they ranged in age from 28-37 years at the time of the birth, were somewhat culturally diverse and had different reproductive histories. The themes developed from their interviews represent the meaning of the breastfeeding experience to them as a mother in critical care. The findings from this study may assist care providers in critical care units to understand what is helpful or what may be a barrier, in a mother's efforts to establish a breastfeeding relationship with her new baby. There are implications for clinical practice and services, health care provider education, and research, generated from the findings. However, it must be remembered that because this study was completed with women who had their critical care experience within the previous five years, clinical practices and policies may have changed. Swanson's Theory of Caring (1991, 1993) will be used to illustrate concrete ways nurses in critical care units can help mothers admitted to those units, with the separation from their baby and its effect on establishing breastfeeding and the mothering of that baby.

### **6.1 IMPLICATIONS FOR PRACTICE**

The three themes, developed in this study, 1) Separation from my Baby, 2) Breastfeeding, an afterthought in the ICU, and 3) Surviving pre-empts Breastfeeding, can

be used to improve practice in caring for postpartum women in critical care. The underlying premise of Swanson's Theory of Caring is the attitude of the health care provider towards the patient (Swanson, 1993). Caring begins with "maintaining belief" (p.354) in the patient's ability to survive their current situation and maintain hope for the future. The mothers in this study identified that they needed care providers to believe, and acknowledge, that they could breastfeed and mother their baby in the future, and to facilitate them in meeting those goals. Maintaining belief in the mother's ability to get through the separation and provide breastmilk for her baby is a supportive nursing action to help a mother continue pumping even when separated from her baby.

The mothers in this study wanted nurses to acknowledge them as new mothers who were separated from their baby and to understand their unique medical and mothering situation. According to Swanson, (1993), a nurse employing the caring process of "knowing" the patient would strive "to understand events as they have meaning in the life of the other" (p.355). It involves not making assumptions about the patient's situation and "thoroughly assessing all aspects of the client's condition and reality" (p. 355). The nurse would try to understand the woman's "clinical condition (in general) and the situation and client (in specific)" (p. 355). Critical care nurses providing care for a postpartum mother not only have professional responsibility to listen, understand and respond to the woman's physical condition, but also to consider the interplay between the woman's medical condition and important adaptations and expectations relevant to her pregnancy and postpartum period. For example, women with severe postpartum hemorrhage can have a delayed lactogenesis (milk production) because of their volume of blood loss and the effect on the pituitary gland (Brown & Jordan, 2012; Hurst, 2007;

Thompson et al., 2010). On the other hand, women experiencing symptomatic cardiac disease during pregnancy, when cardiovascular demand is high, may experience improved symptoms and feel quite well after they give birth.

A postpartum mother may have no experience with breastfeeding or she may be very knowledgeable and require minimal support. There are three mothers in this study who had breastfed an older child, but all had some challenges with that breastfeeding experience. Five of the mothers had family history of breastfeeding. It is important that critical care nurses familiarize themselves with (or “know”) a particular patient’s breastfeeding plans, goals, and her previous breastfeeding experiences, either with her older children or from her family and community (Grassely & Nelms, 2008; Pollock, 2006). It is imperative that the nurse not make assumptions about the patient (Swanson, 1993), particularly with mothers in critical care, not to assume that the patient is “too sick” or “too tired” to begin breastmilk expression, or that breastfeeding is not a priority while the woman is in critical care (de la Cruz et al., 2013; Grassely & Nelms, 2008). Asking the mother what her breastfeeding history is, what her goals are, what arrangements have been made for milk expression and transport to the baby, and what she needs help with can be done when the patient is admitted to the unit, or before if possible for planned births, and noted on the nursing kardex for communication to all care providers. This information will be additive to the care plan to help the mother with breastfeeding efforts. Asking these questions as part of the nursing admission process also lets the mother know that the nurse is aware she is a new mother and wants to breastfeed, i.e., it acknowledges her as a breastfeeding mother, as well as a critical care patient. Communication between the maternity hospital and the adult care hospital was

noted to be lacking by the women in my study. Mothers in this study recommended implementation of strategies to enhance transfer of pertinent information about the mother and baby's medical condition, prenatal care, and infant feeding plans to improve critical care experiences. The prenatal health record contains most of that information but does not always accompany the mother to critical care. Implementation of communication strategies outlined by the Canadian Patient Safety Institute (2011) (including briefings, debriefings, SBAR reporting (situation, background, assessment, recommendation), and use of common language) could be adopted as the routine way of transferring information between the maternity and adult care teams. Development, implementation and compliance may be facilitated by having a multidisciplinary team, including a mother as a patient representative.

Knowing the patient's condition can alert the nurse to potential problems with lactation. All of the mother-baby dyads in this study experienced some medical instability within the first 24 hours, either because of maternal birth complications, or because the baby was preterm. The mothers in this study all wanted to breastfeed, but were very practical about what they would be able to accomplish given their respective medical conditions, the uncertainty of their health and that of their baby after birth, and given the separation from their baby. Knowing what medications will be used for the mother's medical condition and how they may affect milk production or safety for the baby can guide the nurse's care of that mother. It is essential the nurse caring for these mothers be knowledgeable about the potential for medications to transfer to breastmilk and to advocate that medications compatible with breastfeeding be prescribed for a postpartum mother. The nurse may not always have access to a pharmacist for direction in this

regard, and so should have on-line resources available to help with medication care-planning. A list of reputable websites, like LactMed or RxTx, or phone numbers such as Motherisk should be part of the critical care unit's general information for caring for these mothers.

Mothers in this study appreciated the nurses who were "present" with them, recognized them as new mothers, and who spent time talking to them about their own children. Mothers in my study described interactions where the health care providers did not acknowledge that they were a new mother and separated from their baby. There were also instances when the mothers felt like they were a nuisance to the staff or when the staff were impatient with their emotional and information needs. Nurses asking a mother to talk about her baby, looking at pictures of the baby and encouraging the mother's efforts to provide breastmilk are practices that help the woman feel like a mother. One mother specifically noted when a busy nurse, took time to sit and ask "what's wrong?" Showing interest in how the mother is feeling about breastfeeding allows the nurse to get to know what is important to the mother around providing breastmilk and mothering her baby. Spending time (being present) is one of the supportive interventions a nurse can provide when helping a breastfeeding mother in the early postpartum period (Graffy & Taylor, 2005; Grassely & Nelms, 2008; Schmied et al., 2011).

"Being with" the patient emotionally, being present and available to the patient is another caring process in Swanson's theory and the mothers certainly noticed the presence and the absence of it. The relationship between the mother and the nurse can affect whether the mother values the information and interventions that the nurse provides (Karl, et al., 2006). Researchers studying mother- nurse interaction in the NICU



and its effect on mothering have found that women struggle to feel competent as mothers and to enact their role if nurses did not facilitate and promote connection between mother and baby (Aagaard & Hall, 2008; Fenwick, Barclay & Schmied, 2001, 2008; Lupton & Fenwick, 2001). Mercer (2006) has discussed how empathy and getting to know the patient and her baby help the women through the process of becoming a mother.

The mothers in my study reported waiting, sometimes more than 24 hours after their baby's birth, before pumping was started because the critical care nurses were waiting for the PCNS to come and help the mother. When a mother delivers a baby who needs neonatal intensive care, she is encouraged to start milk expression within the first six hours of birth (Nygqvist, et al., 2013; Spatz, 2012) as longer delay makes lactation more difficult. None of the mothers reported getting direct breastfeeding assistance from critical care staff, beyond provision of a fridge for storage of expressed breastmilk. The critical care staff did not proactively reach out to lactation support or try to help the mother get started with milk expression on their own. The women in my study described conversations with health care professionals during which care providers admitted lack of skill and experience with providing postpartum care. None of the critical care staff seemed to understand the physiology behind lactation or the importance of breastfeeding to the mother. To improve practice, health care professionals in critical care need easily available resources on breastfeeding support. Preprinted breastfeeding care plans that outline when to start, how often to express, and how to store milk safely would prevent delays in milk expression. Staff access to learning materials on basic physiology of lactation and the basis of the best practice of early and frequent expression/breastfeeding would also be important to minimize delays in establishing and maintaining milk supply.

Learning materials should also include the immediate benefits of breastfeeding to mothers, such as a decreased risk of postpartum hemorrhage (WHO, 2009) stress reducing effects of oxytocin on the mother (Bigelow et al., 2012; Feldman, et al., 2007) and prevention of engorgement and/or mastitis (Riordan & Wambach, 2010). Ensuring critical care staff access to contact information for professional and community based telephone support, may also increase staff confidence in providing breastfeeding support. Providing information on how and where to acquire an electric breastmilk pump, along with instruction on how to use it is essential for staff who need it infrequently. Information on how to hand express breastmilk would be useful if the mother prefers to hand express or during times when access to an electric pump is limited, so the milk expression. “Doing for” the patient, what she would do for herself if she could, is another of Swanson’s informed caring processes (1993) When “doing for” the postpartum mother in the critical care unit, the nurse can help her with the expression of breastmilk and delivery to her baby. Lack of confidence and lack of competence in postpartum care skills among critical care nurses when caring for obstetric patients impedes their ability to provide holistic care to these patients (Engstrom & Lindberg, 2013; Kynoch et al., 2010a).

The mothers in this study all had Caesarean sections and needed help getting into a comfortable position to express breastmilk, and then following the expression they needed help cleaning any equipment and with milk storage. These are practical interventions the nurse can do for the patient that can actively assist the patient to achieve her goal of establishing and maintaining lactation until she can breastfeed her baby directly. However, the nurses, and support staff, such as patient aides or care team

assistants, on the units could benefit from inservice education on how to help in positioning the breastfeeding mother, how to set up the pump, and how to clean it. They need to have contact information for troubleshooting problems at any time of the day. Having designated staff members to learn more about and then care for postpartum and breastfeeding women may also be worth considering

Pain and mobility limitations post Caesarean section are cited as barriers to breastfeeding success, even in mothers who are not in critical care (Karlstrom, Engstrom-Olofsson, Norbergh, Sjolting & Hildingsson, 2007; Manhire et al., 2007; Tully & Ball, 2014). In the beginning the nurse may need to “do for” the patient, so she needs to have knowledge of how to express breastmilk as part of the basic nursing care of that patient. Later, when the patient can use the pump or hand express, independently, the nurse can transition to an enabling role by assisting the mother when needed or facilitating the storage and transport of milk only.

Enabling, according to Swanson (1991) is the informed caring practice of facilitating the patient moving to a state of well-being, by supporting, educating, and validating the patient’s experience. Enabling the patient in the case of postpartum women in critical care includes making sure that they are able to connect with their baby and the baby’s caregivers by arranging phone calls, or using any videoconferencing technology that is available. Women in my study described these ways of visualizing their babies as not only emotionally connecting, but also being powerful enough in one case to evoke the physical milk ejection. Breastmilk expression can be difficult when mother is not near her baby, because of a lessened milk ejection reflex. But milk expression can also be relaxing for a mother, because of the oxytocin release (Feldman, et al., 2007), and is known to

decrease stress (Bigelow et al., 2012; Mezzacappa et al., 2005; Uvnas-Moberg et al., 2005). Sharing this information with mothers may motivate them to continue to express and generally improve their well-being while in the stressful environment of a critical care unit. A mother can stimulate a milk ejection reflex by thinking about her baby, looking at pictures or have an article of clothing that smells like the baby (Kernerman & Newman, 2009; WHO, 2009). Having mothers and babies together when possible promotes a natural milk ejection reflex that makes breastfeeding or milk expression easier (WHO, 1998; 2009) The NICU at the maternity hospital is embracing the virtual NICU concept with a new project called “ChezNICU” which allows the neonatal patient rooms to be seen by family at home, using smartphones, tablets and computers (Government of Canada, 2015). This type of connection between babies and caregivers who cannot be with them provides allows them, to be virtually involved in their care and their life. Mothers in critical care have access to Wi-Fi service at no charge and should be able to use it to interact with their baby at the maternity hospital NICU. When the new service is launched in 2016, critical care staff will have to liaise with the NICU to make sure a postpartum mother has the capability to use it. The mothers in this study described how special it was to see pictures of their older children meeting the new baby, and this technology would allow the mother to participate in her baby’s care as well. Mothers also expressed how upsetting it was to know that their baby was undergoing needed medical tests without them there to provide comfort. They also wanted to see how their baby was being cared for while at the NICU. A “virtual” presence could help allay fears about what is happening to their child in their absence.

The mothers in this study were all very clear that they did not need or want the critical care nurses to be lactation experts. They needed the nurses to understand their situation and their need to make a connection with their baby, to help them with breastmilk expression, to be a resource to access more lactation support if needed and to look after their immediate medical needs so they would be well enough to be a mother to their baby.

## **6.2 IMPLICATIONS FOR SERVICE**

The findings from my study suggest ways that health care services could be improved for these mothers. All of the mothers and babies were cared for in separate hospitals within the same city. The one mother in my study who was able to have her baby transported to the critical care unit for a visit described how special that was for her, her husband and her baby, to be able to spend time together as a new family. During this visit mother and baby were able to have skin-to-skin time, so important to increase oxytocin levels, promote breastfeeding and for continued attachment. The separation of mother and baby impacted the initiation and maintenance of the breastmilk supply, the breastfeeding relationship, and the mothering process, to some degree for all women. Separation also complicated mothers and babies becoming acquainted and continuing the attachment process. Being able to transport either the mother to her baby or the baby to mother for a visit can facilitate breastfeeding and provide comfort for both mother and baby (Campbell & Rudisill, 2006; Harvey, 1992; Hinton, et al., 2015; Thompson et al., 2010; Watson et al., 2013). Family centered care, with fathers and siblings being included in the birth and on postpartum units, is routine now in maternity care units in Nova Scotian hospitals (Prenatal Education and Support Working Group, 2005). Given their

small numbers in the critical care unit, family centered care could be extended to these families for the usually short admission period. At present, there is no set visiting policy at the adult care hospital; there is open visiting on most units 24 hours a day, with a suggested rest period in the afternoon. However, individual units decide about visiting hours and whether family members may stay for extended periods with the patient. Critical care units tend to be closed areas, where visitors cannot enter unless they are permitted in by staff, but they cannot stay indefinitely. There is exception made for dying patients or for confused patients who need family close by to reorient them. Expectations of support for postpartum women and their families will need to change to allow for 24 hour visitation , recognizing that mothers and babies need to be together to establish breastfeeding, further attachment and the woman taking on the mothering role. In my experience working in adult critical care and acute care units, staff do not generally welcome babies who are brought to visit their mothers who are patients on these units. This observation is supported in the literature as well (Engstrom & Lindberg, 2013; Hinton et al., 2015; Kynoch et al., 2010a). However it is essential that critical care nurses and other care providers facilitate having mothers and infants together whenever and however possible, in order to provide evidence based care. The mother in this study, who had a visit from her baby, did so because maternity centre nurses volunteered to come in on their day off to accompany the baby and stay for the visit with the mother in critical care. Visits between mother and baby should be organized as part of the dyad's medical treatment. A mother could be taken to see her baby at the maternity hospital while monitored by a critical care nurse; in the same way that patient is monitored when they are transported to tests that must be performed off unit. If the baby is stable and ready to

be discharged from the maternity hospital, arrangements should be made to have the baby room in with the mother in her critical care room. Bassinettes and a cot for the adult, who will be responsible for the baby, can be kept in the acute care facility for easier access. A private room should be found, if possible, for a mother if she is able to move out of the unit to a less acute area so that mother, baby and her support person can continue to stay together. Lack of a private room is not a reason for mother-baby separation, as rooming in is done in semi-private and ward rooms on the postpartum unit at the maternity hospital.

The mothers in this study were all agreeable to being admitted to the critical care unit in the postpartum period so they would have the specially trained staff and other resources needed if their medical condition worsened after the birth. However, most of the women reported that although they required hemodynamic monitoring and medication titration during the critical care unit stay, none of these women required mechanical ventilation or other major intensive care interventions or treatment. Several of the mothers perceived that they were not as sick as the average critical care patient, a feel often created or exacerbated by comments made by the critical care staff, for example overhearing nurses questioning why she was occupying a critical care bed when “all she did was have a baby”. Unfortunately, these experiences and feelings have been also echoed and documented by other postpartum women in critical care units by the participants in the study by Engstrom & Lindberg (2011). Mothers in my study related that they were fairly mobile and self-sufficient while in critical care and often did not understand the aloofness of some staff as they were an “easy” patient to look after. In some large urban areas, hospitals with maternity services also have obstetric intensive

care units or obstetric high dependency units (similar to IMCUs); however, these centres have larger numbers of obstetric admissions to critical care than would occur in this area. It is reasonable to ask the question whether the women admitted to critical care really need to be there, or would an IMCU level of care meet their needs and whether that could be provided in the maternity centre. It is logistically easier to coordinate visits between mothers and babies if they are in the same building. The literature on obstetric admissions to critical care units suggests that because most of the women do not require mechanical ventilation, they may not need to be admitted to critical care (Engstrom & Lindberg, 2013; Kozier & Wallace, 2011; Pollock, 2006; Zeeman, Wendel & Cunningham, 2003). It is also done in other large centres critically ill women are often cared for in the labour and delivery unit by staff with advanced critical care skills (Sloan & Quinn, 2013; Watson et al., 2013). This allows obstetric and maternity care to continue to be provided by experts in that area. In any case, wherever these mothers are admitted, there will have to be a multidisciplinary approach to care, inclusive of intensivists, obstetricians, maternity nurses, lactation specialists, pharmacists and critical care nurses to provide holistic care to these women (Benn & Minton, 2007; Campbell & Rudisill, 2006; Engstrom & Lindberg, 2013; Hinton et al., 2015; Kynoch et al., 2010a;2010b; Watson et al., 2013). The United Kingdom has created a jointly produced document on the care of critically ill pregnant and postpartum women in which they recommend having a dedicated midwife to work with these patients (Maternal Critical Care Working Group, 2011). There is a specialty critical care course for midwives in England to prepare them to care for these patients (Sloan & Quinn, 2013). Future training for maternal critical care



at the maternity hospital might be guided by the programs already in place in the United Kingdom.

The mothers in my study identified that critical care staff caring for them did not always recognize them as a new mother, or were not aware of their planned admission. There was some emotional support or interest from some critical care staff, but in all cases, the lactation support was left to the PCNS. There is no policy currently at the adult care hospital to guide staff on how to support breastfeeding in a postpartum patient. However, other centres do have policies for supporting breastfeeding mothers admitted with an acute illness (Watson et al., 2013), that could be used as a guide for policy development here in Halifax. Halifax is different than many health care facilities because maternity care services are housed in a different hospital, than the adult critical care services. However, the “Ten Considerations to Help Support Breastfeeding in Women who are Hospitalized and Acutely Ill” (p. 195) identified by Watson et al. can be relevant for health care professionals providing care to the new mothers in our adult acute care hospitals. The ten considerations are:

1. Pump now, decide later;
2. Breasts should not be ignored;
3. Rarely too ill for skin-to-skin;
4. Wherever there's a mother there's a baby;
5. Remember that families are in crisis;
6. Above all, do no harm;
7. Pumping benefits both the mother and the baby;
8. Know when a risk is a risk;

9. Evidence is critical;

10. Say “yes” to the breast.

Breastfeeding resources suggested in Watson’s article include information on breastfeeding friendly medications, where to obtain a breastmilk pump or direct telephone assistance from a lactation consultant.

The results from my study underline the importance of establishing easily accessible resources for critical care nurses to guide breastfeeding and mothering related care and pathways to additional resources and support, when they have a postpartum patient who plans to breastfeed. The findings from my study can now be used to guide revisions to this breastfeeding toolkit I drafted for critical care nurses in 2012. Inclusion of information about the study themes will be important. For example, emphasizing how separation affects mothering as well as breastfeeding, so that health care professionals can understand and respond to these difficult separations. Inclusion of specific strategies such as using the “ChezNICU technology” to promote mother-infant connection would also be beneficial. In addition to previous toolkit information on pumping and storage techniques, guidance for nurses about hand expression of breastmilk would also be important as a way to prevent delay in mothers establishing their milk supply. Swanson’s Theory of Caring may be a useful organizer to consider for the toolkit.

Breastfeeding support is the responsibility of every health care provider in Nova Scotia as set out in a provincial policy on breastfeeding. At present, there are postpartum women being cared for in the acute care settings and still there is no clear approach to supporting breastfeeding in these women, whether they are immediately postpartum or admitted months later and breastfeeding. Breastfeeding is part of health promotion and

disease prevention which translates to health care cost savings. As a province, we promote breastfeeding for its health benefits and disease prevention, so it is a contradiction to then not provide assistance to those who are breastfeeding or intend to, just because they are admitted to a hospital. There is need for a dedicated strategy to support breastfeeding in our hospitals, just as there is a dedicated provincial strategy for tobacco control. Patients admitted to hospital are provided with concrete smoking cessation support and community follow up if they wish. A health district policy was developed in 2013 to guide support of breastfeeding employees, including those working at the adult care hospital, so there is recognition of the responsibility to protect, promote and support breastfeeding outside of the maternity centre. The policy developed by Watson et al. (2013) is a good template for how to develop recognition of breastfeeding support and what resources are helpful to staff not normally involved in maternity care. A comprehensive strategy of breastfeeding support would include education of staff and the public that the adult care hospital supports breastfeeding mothers, and we have policies and procedures in place to accommodate breastfeeding families so the breastfeeding relationship is maintained. Public education that breastfeeding is important, regardless of whether the mother is ill or not, is needed so patients and staff understand that the expectation of care is that breastfeeding is supported. The evidence from this study can be used to start a conversation about where the most appropriate facility or unit is to care for these mothers, or whether services could be restructured so care could be delivered in a maternity setting safely.

### **6.3 IMPLICATIONS FOR EDUCATION**

The mothers in my study were aware of the differences in the expertise of the staff working in different areas and were very aware that their critical care nurses were not prepared to provide the concrete guidance and support about breastfeeding that they needed. However, it is unclear how the nurses in those particular critical care units perceived their role in breastfeeding support or their preparation or skill in meeting those patient health needs. In the literature on critical care nurses' experiences of caring for postpartum mothers, the nurses indicated they did not feel qualified or competent to provide postpartum care or lactation support and thus did not feel confident in caring for these mothers (Engstrom & Lindberg, 2013; Kynoch et al., 2010a). The nurses in Kynoch's study felt they needed extra education to increase their competence in the skills necessary to care for these patients. Solutions to support critical care nurses in providing needed breastfeeding support could include providing online links to medication databases and to set up a 24-hour a day phone line for staff to speak to a lactation consultant (Watson et al., 2013). If postpartum women require intensive cardiovascular monitoring without mechanical ventilation, it might be possible for a cohort of labour and delivery (and possibly operating room) staff to complete education and practice experiences needed so that mothers could remain in a maternity care environment (Sloan & Quinn, 2013). It is unclear whether this option for care of postpartum mothers requiring cardiovascular monitoring has been explored by the maternity hospital. However, no matter where a breastfeeding mother is having her critical care needs met, it is essential that unit staff recognize and acknowledge her as a new mother, and that they individually and collaboratively assess and respond to her specific postpartum and breastfeeding needs, such as making contact with her baby, establishing and maintaining

lactation and forming a new family. Therefore, it is important for hospitals and individual units in which breastfeeding women receive care, to develop targeted strategies to enable staff to strengthen and maintain competencies in maternity and breastfeeding care and support. Education on the “10 Steps for Successful Breastfeeding” and the evidence behind them would fill gaps in education that staff outside of maternity care have around breastfeeding best practice.

There is dissonance among critical care nurses about who is responsible to provide the postpartum care and family care, with some nurses feeling they are responsible only for the mother and only for her critical care needs and not any postpartum nursing care (Engstrom & Lindberg, 2013; Kynoch et al., 2010a). I plan to share my study results with critical care staff through nursing grand rounds, and individually to critical care units via professional practice leaders and nursing educators for those units. I also plan to present my findings specifically to the Department of Cardiology through Cardiology grand rounds or some other suitable format given the number of mothers in the study who had cardiac issues and it being the clinical area in which I am employed. My study would also be of interest to the maternity hospital as a presentation at Breastfeeding grand rounds. Direct presentation of my findings can be an effective way to stimulate discussion about what and how individual care and unit and hospital processes can change to better meet the needs and enhance the breastfeeding experience of postpartum mothers in critical care. Sharing the mothers’ own words may also help sensitize staff about the significant positive and negative impacts of their attitudes and interactions on the experience of breastfeeding women in their units. Of course, I will be presenting my study to La Leche League Canada (LLLC) Leaders as part

of Leader education in the Atlantic Canada area and at the national level, as mothers are often referred to LLLC for community breastfeeding support. Leaders field calls from mothers anticipating hospitalization and asking for help to prepare for breastfeeding while in hospital.

In my study, the mothers themselves express how important being with their baby is, how expressing breastmilk is essential for them to establish and maintain a milk supply, and how encouragement and support can make a notable difference in their ability to persevere with milk expression. The descriptions of their experiences of critical care can help critical care staff understand the vital role they can have in providing holistic care to postpartum and breastfeeding women. Staff in critical care have a lasting influence on the families they care for (Benn & Minton, 2008; Elmir et al., 2011), and mothers want recognition from staff of the emotional difficulty of being in critical care (Engstrom & Lindberg, 2011).

#### **6.4 IMPLICATIONS FOR RESEARCH**

Separation of mother and baby was difficult for all the women in this study and needs to be avoided whenever possible to promote mother-baby attachment and breastfeeding. Review of admission criteria to the critical care unit and the course of treatment in the local critical care units might help clarify if the mothers actually require critical care. Review of how high dependency units located in maternity centres in other locations function might provide insight on whether these specialized units could be established here, to facilitate collaboration of intensive care and obstetrics and have mothers and babies cared for in the same facility. The research done by physicians on pregnant and postpartum women in critical care usually focuses on clinical treatments, or

they are mortality and morbidity studies. Reviews exist on the frequency of admissions, the reasons for admissions and what treatment modalities were required in an effort to plan for future obstetric critical care cases (Kozier & Wallace, 2011). Knowing the intensity of local care needs and treatments provided can be helpful in designing a model of care to best to care for postpartum mothers. Perhaps mothers and babies could be cared for in the same hospital with a change in care delivery, movement of critical care or maternity staff as needed, instead of moving the mothers and babies.

Until different admission procedures are developed, research could help us consider how we can facilitate babies coming to visit or stay in the critical care unit sooner if they are stable. Qualitative studies with the health care providers in critical care could provide input as to what they see as the barriers to babies coming to the critical care units, and suggest what they feel they need for supports so they are comfortable with babies staying in mother's rooms. Using a survey study design may capture more staff input on their knowledge level of breastfeeding and postpartum care, as well as suggestions for education needs and resource needs to accommodate breastfeeding families in critical care. A pilot project of implementing a policy similar to Watson et al.'s (2013) can be evaluated and modified to fit our unique situation where the maternity centre is in a different building.

There is limited research on critical care nurses' and physicians' perspectives of care for breastfeeding mothers. In order for breastfeeding to not be an "afterthought in the ICU", we need to ask for the nurses and physicians voices to be heard about what education or support resources they need in order to create a culture of breastfeeding in critical care units. This could be the basis of important research in the future

## 6.5 STUDY STRENGTHS AND LIMITATIONS

A strength of this study is that it is among the first to explore the mother's perspective on breastfeeding in a critical care unit. It is also a unique study because all but one of the seven of the mothers had scheduled births, and all were hospitalized in critical care units of a single hospital. Coincidentally, the majority had cardiac disorders at the time of their hospitalization, again making this a rather homogenous group. The homogeneity of the sample might be seen as a limitation since there was not the urgency of an emergency admission, where the mothers are not prepared for the admission and separation from their baby.

The organization of health care in this geographic area is such that maternity care is provided in a free standing facility, not part of a general hospital, so there an extra layer of separation for the mothers in this study, because they are in a different building. Most other studies on mothers' experiences in critical care units do not involve that extra degree of separation. This difference is could be viewed as a limitation.

The study sample was ethnically diverse, with maternal age ranging from 28 to 37 years of age, and their babies were born between 31 weeks and 6 days to 37 weeks gestation. There were first time mothers and those with other children. A strength of this study is that despite the range of mothering experience, gestation of the babies and culture, the mothers described similar experiences. There were mothers at both ends of the five year time frame established for study inclusion, so for some mothers the experience was very recent and for others, some time had passed. This might impact event recall somewhat (Simkin, 1992), but the overall experience and recollection of that



particular time in their lives remained vivid. The concerns that mattered to them came through easily and with detail as they shared their stories.

The trustworthiness criteria for conducting a phenomenological study were followed, and served to strengthen this study. There was sufficient description of the interviews provided in exemplars to show how the themes were developed, and the sample size was more than adequate for themes to become obviously recurrent to the researcher. Member checking and clarifying the researcher's position were done, and both add validity to the study (Creswell, 2013).

As the researcher, my own history with pregnancy, childbirth, breastfeeding and mothering helped lead me to this study and it influenced my interpretation of the results. I am also a nurse who cares for postpartum mothers with cardiac issues on my unit, so I am professionally embedded in their experience and in the experience of the nurses caring for them, who are my co-workers. My personal and professional experiences situated me well to research this phenomenon, and is a particular strength of this study.

## **6.6 CONCLUDING THOUGHTS**

Interpretive phenomenology was used in this study to gain an understanding of the experiences of postpartum women who wanted to breastfeed but who required hospitalization in a critical care unit. The three themes; *Separation from my Baby*, with two sub-themes, 1) Planning helps with separation, 2) Creative connections; *Breastfeeding, an Afterthought in the ICU*; and *Surviving Pre-empted Breastfeeding*, describe the experiences of these mothers. The themes highlight aspects of critical care that can impact breastfeeding in positive and negative ways, and evidence generated from this study can now be a foundation to explore ways to strengthen health

care practices, systems and policy. The findings from this study of women's experiences of breastfeeding in critical care indicate that their establishing and maintaining a milk supply to feed their baby is very important to them. Ultimately, although the women did not expect health care professionals in critical care to be breastfeeding experts, they identify many ways these professionals can support them in mothering their baby and help them have the best possible opportunity to successfully breastfeed.

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## APPENDIX A

### WHO Ten Steps for Successful Breastfeeding

#### **Step 1**

Have a written breastfeeding policy that is routinely communicated to all health care staff.

#### **Step 2**

Train all health care staff in the skills necessary to implement the policy.

#### **Step 3**

Inform pregnant women and their families about the benefits and management of breastfeeding.

#### **Step 4**

Help mothers initiate breastfeeding within a half-hour of birth. WHO 2009: Place babies in skin-to-skin contact with their mothers immediately following birth for at least an hour. Encourage mothers to recognize when their babies are ready to breastfeed and offer help if needed.

#### **Step 5**

Show mothers how to breastfeed and how to maintain lactation, even if they should be separated from their infants.

#### **Step 6**

Give newborns no food or drink other than breastmilk, unless medically indicated.

#### **Step 7**

Practice rooming-in - allow mothers and infants to remain together 24 hours a day.

#### **Step 8**

Encourage breastfeeding on demand.

#### **Step 9**

Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.

#### **Step 10**

Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

## **APPENDIX B**

### **Breastfeeding Committee for Canada: Integrated 10 Steps The Interpretation for Canadian Practice**

Integrated 10 Steps & WHO Code Practice Outcome Indicators for Hospitals and  
Community Health Services: Summary

#### **Step 1**

Have a written breastfeeding policy that is routinely communicated to all health care providers and volunteers.

#### **Step 2**

Ensure all health care providers have the knowledge and skills necessary to implement the breastfeeding policy.

#### **Step 3**

Inform pregnant women and their families about the importance and process of breastfeeding.

#### **Step 4**

Place babies in uninterrupted skin-to-skin<sup>1</sup> contact with their mothers immediately following birth for at least an hour or until completion of the first feeding or as long as the mother wishes: encourage mothers to recognize when their babies are ready to feed, offering help as needed.

#### **Step 5**

Assist mothers to breastfeed and maintain lactation should they face challenges including separation from their infants.

#### **Step 6**

Support mothers to exclusively breastfeed for the first six months, unless supplements are medically indicated.

#### **Step 7**

Facilitate 24 hour rooming-in for all mother-infant dyads: mothers and infants remain together.

**Step 8**

Encourage baby-led or cue-based breastfeeding.

Encourage sustained breastfeeding beyond six months with appropriate introduction of complementary foods.

**Step 9**

Support mothers to feed and care for their breastfeeding babies without the use of artificial teats or pacifiers (dummies or soothers).

**Step 10**

Provide a seamless transition between the services provided by the hospital, community health services and peer support programs.

Apply principles of Primary Health Care and Population Health to support the continuum of care and implement strategies that affect the broad determinants that will improve breastfeeding outcomes.

## APPENDIX C

### Letter of Introduction

#### “The Meaning of the Breastfeeding Experience for Mothers in Critical Care” Research Study

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Dear \_\_\_\_\_

My name is Glenda Carson, and I am the nurse specialist you met when your baby was born in (year). I may have helped you with your prenatal birth plans, or with breastfeeding your baby after he or she was born. You are being contacted because you were admitted to an intensive care unit (sometimes called ICU or critical care) after having a baby you planned to breastfeed.

I am contacting you on behalf of Michele McShane, a Master of Nursing student at Dalhousie University who is conducting a study as part of her thesis requirements for her degree. Health care providers know very little about what breastfeeding or wanting to breastfeed is like for mothers who need to be in an intensive care unit after their baby’s birth. That is why she is interested to hear your story and the stories of women like you, about wanting to breastfeed your baby and being in an intensive care unit. This will help us know how to best care for these mothers and babies.

If you can answer “Yes” to all 3 of the questions below, you could be eligible to take part in this study

1. Did you give birth in the last 5 years?
2. Did you plan to breastfeed that baby? (You do not need to have actually breastfed your baby; you just need to have wanted to breastfeed.)
3. Were you admitted to an intensive care unit (ICU) for at least 24 hours within the first 6 weeks after that birth?

The study will include 2 face to face interviews that would be audio-recorded. If you live far away the interviews can be done using internet conferencing, such as Skype, or the phone. If you agree to be part of the study, Michele will ask you to read and sign a detailed consent form prior to a first interview. Your privacy will be protected. What you tell her will be confidential.

You will receive a \$10 Sobeys gift card for participating in the first interview, and a children’s book for participating in the second interview.

I will call you within 2 weeks to discuss the study further with you. If you are not interested in receiving a phone call, please call my office at (902) 470-6648, or email me at [glenda.carson@iwk.nshealth.ca](mailto:glenda.carson@iwk.nshealth.ca) .

Thank you for your time and consideration of the study.

Dr. Glenda Carson PhD RN PNC(C) IBCLC, IWK Health Centre

## **APPENDIX D**

### **Interview Guide**

What is your age now? How old were you when this baby was born? How far along were you in this pregnancy when this baby was born?

How many times have you been pregnant? How many losses?

How many children do you have? And where is this baby amongst the others? Older?

Younger?

Did you breastfeed any of your other children?

Why were you in an intensive care unit or ICU postpartum?

Was it a planned admission or an emergency?

#### **PRIMARY QUESTION**

Tell me about your experience of being in a critical care unit soon after having a baby that you planned to breastfeed, and how that compared to what you were hoping for.

#### **INTERVIEW PROBES**

1. Think back and describe what your plan for breastfeeding was like for that particular baby? What did you expect that breastfeeding would be like?

2. Tell me about your stay in critical care after your baby was born? How did you feel? What stands out the most about being there?

3. How did breastfeeding go for you while you were there? How was that the same or different from what you had expected?

4. What did it mean to you to be able to hold your baby skin-to-skin/ go to breast/pump milk for your baby who wasn't there with you?

5. Describe what it felt like to be unable to: pump/nurse/hold your baby skin-to-skin?

6. Who or what was helpful to you with your breastfeeding plan and can you describe how they were helpful?

7. Can you describe who or what interfered with your plan to breastfeed?

8. How did being separated from your baby affect your plan to breastfeed?

9. How long were you able to continue breastfeeding? What is breastfeeding like for you now? Is there anything else you would like to tell me about your breastfeeding experience with this baby?

## **APPENDIX E**

### **Consent Form**

#### **Research Title:**

The Meaning of the Breastfeeding Experience for Mothers in Critical Care

#### **Researchers:**

Michele McShane BScN RN, Master of Nursing Student

Dalhousie University  
Principal Investigator

Glenda Carson PhD RN PNC(C) IBCLC

XXX Health Centre  
Supervising Investigator

Faith Wight Moffatt RN PhD.  
School of Nursing, Dalhousie University  
Thesis Supervisor

Marilyn Macdonald RN PhD.  
School of Nursing, Dalhousie University  
Thesis Supervisor

#### **Funding:**

Dalhousie University- Scholarship funds

#### **Introduction:**

You are being invited to take part in the research study named above. This form provides information about the study. Before you decide if you want to take part, it is important that you understand the purpose of the study, the risks and benefits and what you will be asked to do. You do not have to take part in this study. Taking part is entirely voluntary (your choice). I will be available to answer any questions you have. You may decide not to take part or you may withdraw from the study at any time. This will not affect the care you or your family members will receive from the XXX Health Centre in any way.

#### **Why are the researchers doing the study?**



I am a Master of Nursing student at Dalhousie University. I am doing a research study on the meaning of the breastfeeding experience for mothers in critical care.

Breastfeeding has many health benefits, both physical and emotional, for mothers and babies. These benefits are well documented in the research. Breastfeeding is recommended as the best way to feed infants and small children by health care providers in Canada.

Some mothers have health problems that require them to be cared for in a critical care unit outside of the maternity floor or hospital. I would like to learn about what the breastfeeding experience was like for those mothers who required critical care treatment and who had intended to breastfeed. The findings may help future mothers and their babies by giving us information about what happened when you were there and what was important to you as a new mother who wanted to breastfeed.

### **How will researchers do the study?**

This study will use two face to face interviews; the first one will be approximately 60-90 minutes long. The second will be shorter, approximately 30-60 minutes long. The second will be a time for the researcher to ask further questions and for you to add information or correct any information from the first interview. If the participant lives outside Halifax Regional Municipality, the face to face interview could be done via internet video conferencing such as Skype. If neither in person or internet face to face interviews are possible, the interview can be done over the telephone.

The interviews will be audio-recorded regardless of how the interview takes place. The audio- recordings will be transcribed word for word. The transcribed interviews will be analyzed for how the experience was the same or different for the participants. It will also be analyzed for what the meaning of this experience was for participants.

### **What will I be asked to do?**

I will ask you to take part in two face to face interviews, if face to face interviews are possible for you. The first interview is approximately 60-90 minutes long. It will take place in a private, convenient location for you, such as your home, or a public area that is suitable for audio recording. You will be asked some general health information for study purposes, such as how many children you have and your age.

You do not have to answer any question you are uncomfortable with, and you can withdraw from the study at any point.

### **What are the burdens, harms and potential harms?**

There are risks to participating in any study, however the risk of harm to you from participating in this particular study is minimal. The most likely foreseeable risk to you is emotional distress from discussing your time in critical care after giving birth. It is highly unlikely that you will be exposed to physical harm from your participation, but there are always unforeseen risks possible.

The researcher will provide you with contact information for help if you feel emotionally distressed from participating. This contact information will be given to you before the interview, to be used as you see fit afterwards.

**What are the possible benefits?**

You may find it helpful just to talk about your experience of being a mother in critical care who wanted to breastfeed.

It is hoped that what is learned will be of benefit in the future for care of mothers who want to breastfeed and who need critical care treatment after birth.

**What alternatives to participation do I have?**

Not participating in the study is the other option. Not participating will not affect any care you or your family are now receiving or might receive in the future from the XXX.

**Can I withdraw from the study?**

Participants can withdraw from the study at any time. Withdrawing from the study will not affect any care that you or your family are now receiving or might receive in the future from the XXX.

You can withdraw from the study by contacting the principal investigator or her supervisors via email. Contact information will be provided at the end of this letter.

Any data collected up to the point of withdrawing from the study, will be used in the study results.

A participant may be withdrawn from the study if the principle investigator, her supervisors or the XXX Research Ethics Board decide that to continue would be harmful to the participant.

The study may be terminated before completion if the principle investigator, her supervisors or the XXX Research Ethics Board deems it necessary.

**Will the study cost me anything, and if so how will I be reimbursed?**

The study will cost you your time, and any travel expenses you incur for meeting for interviews. You will receive a \$10 Sobeys gift card for participating in the first interview. You will receive a child's book for participating in the second interview.

**Are there any conflicts of interest?**

There is a potential conflict of interest on the part of the Principal Investigator, in that this study is conducted for academic credit.

**What about possible profit from commercialization of the study results?**

There is no possible profit from commercialization of the study results.

**How will I be informed of study results?**

Participants will be mailed the general results of the study if they choose to receive them. Individual study results will not be provided. It may take up to a year for the results to be mailed to you.

“Would you like to receive a summary of the study results?”

YES \_\_\_\_\_ NO \_\_\_\_\_ Please provide your address.

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**How will my privacy be protected?**

If you decide to participate, you will be assigned a number and all interview transcripts and notes about your interview will only be labeled with your number. These documents will be stored electronically on a password protected and encrypted computer and flash drive, and any hard copies will be stored in a locked filing cabinet. Your contact information with your assigned number will be stored in a separate locked filing cabinet. The information from the study will be kept for 5 years, as required by the XXX Research Ethics Board, and then destroyed.

Your information will not be shared with anyone but the researcher, her supervising investigator at the XXX, her thesis supervisors, the XXX Research Ethics Board and the XXX Research Audit Committee. This sharing is a necessary part of the ongoing monitoring of research activities.

If the results of the study are published, you will not be identified in the publication.

Anonymity cannot be guaranteed because the researcher needs to know your name and contact information in order to conduct the study.

**What if I have study questions or problems?**

If you have questions or problems you can contact me at XXX or XXX (cell). You may leave an email anytime, and you may call between 7 a.m. and 10 p.m.

The XXX supervising investigator is Dr. Glenda Carson (XXX email) or (XXX telephone). My thesis supervisors are Dr. Faith Wight Moffatt (XXX email) or (XXX telephone) and Dr. Marilyn MacDonald (XXX email) or (XXX telephone).

**What are my research rights?**

Your signature on the form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate. In no way does this waive your legal rights nor release the investigator(s), sponsors, or involved institution(s) from their legal and professional responsibilities.

If you become ill or injured as a direct result of participating in this study, necessary medical treatment will be available at no additional cost to you. You are free to withdraw from the study at any time without jeopardizing the health care you are entitled to receive.

If you have any questions at any time during or after the study about research in general you may contact the Research Office of the XXX Health Centre at (XXX) Monday to Friday between 8:00a.m. and 4:00p.m

**Future contact/future research/other use**

There are no plans for future contact with the participants or use of the information gathered.

**Consent Form Signature Pages**

**Study title: The Meaning of the Breastfeeding Experience for Mothers in Critical Care**

Participant ID:

Participant INITIALS:

**Participant Consent**

I have read or had read to me this information and consent form and have had the chance to ask questions which have been answered to my satisfaction before signing my name. I understand the nature of the study and I understand the potential risks. I understand that quotations from my interviews may be used in the written report. I understand that I have the right to withdraw from the study at any time without affecting my care in any way. I have received a copy of the Information and Consent Form for future reference. I freely agree to participate in this research study.

Name of Participant: (Print)

Participant Signature:

Date: \_\_\_\_\_ Time:

**STATEMENT BY PERSON PROVIDING INFORMATION ON STUDY**

I have explained the nature and demands of the research study and judge that the participant named above understands the nature and demands of the study.

Name: (Print)

Signature: \_\_\_\_\_ Position:

Date: \_\_\_\_\_ Time:

**STATEMENT BY PERSON OBTAINING CONSENT**

I have explained the nature of the consent process to the participant and judge that they understand that participation is voluntary and that they may withdraw at any time from participating

Name (Print)

Signature: \_\_\_\_\_ Position:

Date: \_\_\_\_\_ Time:

## APPENDIX F

### Thank You Letter

Thank you for participating in “The Meaning of the Breastfeeding Experience for Mothers in Critical Care” research study. Discussing your time in an intensive care unit after the birth of your baby may be emotional for you. If you feel upset after our interview and would like to talk to a health care professional you can:

- Contact your family doctor
- Contact one of the five Community Mental Health teams for Halifax and Hants County

#### **Bayers Road Community Mental Health**

Suite 109, Bayers Road Centre  
7071 Bayers Road, Halifax  
Tel: (902) 454-1400

#### **Bedford/Sackville Community Mental Health**

Cobequid Community Health Centre  
40 Freer Lane, Lower Sackville  
Tel: (902) 865-3663

#### **Cole Harbour/Eastern HRM Community Mental Health**

Cole Harbour Place  
51 Forest Hills Parkway, Dartmouth  
Tel: (902) 434-3263

#### **Dartmouth Community Mental Health**

Belmont House  
33 Alderney Drive, Dartmouth  
Tel: (902) 466-1830

#### **West Hants Community Mental Health**

Hants Community Hospital  
89 Payzant Drive, Windsor

- Contact the [Mental Health Mobile Crisis Team](#) (902) 429-8167

If you live outside of the areas covered by these services and you cannot contact your family doctor, your local emergency room can help you find services in your area. Or you can use the Canadian Mental Health Association website to find services in your area

<http://www.cmha.ca/mental-health/find-help/>

If you have parenting or breastfeeding questions you can call Public Health at (902) 481-5800 and leave a message. One of the public health nurses will return your call within 24 hours.