CHILDBIRTH: A MEDICAL PROBLEM OR A HEALTH CONCERN

CHILDBIRTH: A MEDICAL PROBLEM OR A HEALTH CONCERN

by

CAROL ANN PEREIRA

A Thesis

Submitted to the School of Graduate Studies

in Partial Fulfillment of the Requirements

for the Degree

Master of Social Work

McMaster University

MASTER OF SOCIAL WORK
(2003)

McMaster University
Hamilton, Ontario

TITLE: **CHILDBIRTH: A MEDICAL PROBLEM OR A HEALTH CONCERN**

AUTHOR: Carol Ann Pereira
B.Sc. Chemistry (McMaster University)
B.A. Economics (McMaster University)
B.S.W. (McMaster University)

SUPERVISOR: Dr. Susan Watt

NUMBER OF PAGES: ix, 73

ABSTRACT

Throughout the literature varying opinions exist concerning the health outcomes, service utilization and patient satisfaction as they relate to maternal and infant care given by physicians versus midwifery care. This study looks at the following question; what differences are there in health outcomes, service utilization, and patient satisfaction, between women who are cared for by either physicians or midwives and vaginally deliver a singleton healthy baby in hospital?

This study employs a secondary analysis of data from the TOMIS II study. The TOMIS II data was collected from 250 women in each of five hospital sites in Ontario in 2002.

The analysis showed that, except for the breastfeeding, all of the measures of maternal and infant health outcome did not statistically differ between physician-care and midwifery care. With respect to service utilization, the results indicated that family physician visits, length of stay, and utilization of the Healthy babies, Healthy Children (HBHC) resulted in statistically significant lower service utilization by mothers in the midwifery group, while the other measures were found not to be different. Patient satisfaction measures revealed that women receiving midwifery services were much more satisfied with their care than were women receiving physician-based services.

Five conclusions were drawn from this study; midwifery care is a viable option for maternity care in Ontario for low-risk birth mothers; the utilization of midwives

reduces the total amount of services being used in the health care system; women are more satisfied with their care when they have midwives participating in all parts of their care; health policy in Ontario should focus its efforts to expand midwifery to make it a viable option for maternal and infant care to all healthy women; health care policy should support publicly funded midwifery in each of the jurisdictions in Canada, as a cost-effective approach to care with comparable outcomes.

ACKNOWLEDGEMENTS

I would like to express my gratitude and sincere appreciation to the following people, for without their support, guidance and understanding, the completion of this thesis would not have been possible.

- Dr. Susan Watt, faculty research advisor, McMaster University School of Social Work. Thank you for your understanding, patience and support throughout this project and this entire year. Your guidance provided me with the safe environment that I needed to navigate through this experience successfully.
- Mary Ann Baynton, Johnna Martin, Renee Masching, Pam Nir, and Heather Pengilley, for the ongoing support and camaraderie over the last year. It was comforting to know that there were others along with me on this journey.
- Lori Pereira, for being willing to step-in when I had a day-care crisis.
- Braden, Lexie and Garon Pereira, for understanding why Mommy was not always able to do what you wanted me to do.
- Brett Pereira, for your love, understanding and unspoken support throughout my time back at school. It would have been impossible to have completed this year without ALL of your help.

TABLE OF CONTENTS

		Pages
A.	INTRODUCTION	1
CHAPTER I: LITERATURE REVIEW		3
A.	INTRODUCTION	3
B.	HISTORY OF MIDWIFERY IN CANADA	4
C.	THE MEDICAL PERSPECTIVE ON CHILDBIRTH	9
D.	THE MIDWIFERY PERSPECTIVE ON CHILDBIRTH	12
E.	STANDARDS OF MATERNITY CARE IN ONTARIO	14
F.	WOMEN'S PERSPECTIVE ON MATERNITY CARE	16
G.	COMPARING OPTIONS	21
1.	Health Outcomes	21
2.	Service Utilization	22
3.	Patient Satisfaction	22
CHAPTER II: METHODOLOGY		25
A.	STUDY DESIGN	25
B.	MEASURES	27
1.	Health Outcomes	27
2.	Service Utilization	27
3.	Patient Satisfaction	28
C.	STATISTICAL ANALYSIS	29
CHAPTER III: FINDINGS		30
A.	COMPARISON AT BASELINE OF SOCIO-DEMOGRAPHIC CHARACTERISTICS AND CHRONIC HEALTH ISSUES	30
B.	HEALTH OUTCOMES	31
1.	Mother	31
2.	Infant	33
C.	SERVICE UTILIZATION	33
D.	PATIENT SATISFACTION	37
CHAPTER IV: DISCUSSION		41
A.	SOCIO-DEMOGRAPHICS AND CHRONIC ILLNESS	41
B.	HEALTH OUTCOMES	43
1.	Mother	44
2.	Infant	46
C.	SERVICE UTILIZATION	47
D.	PATIENT SATISFACTION	51
E.	LIMITATIONS OF THIS STUDY	53

CHAPTER V: CONCLUSION..... 56

BIBLIOGRAPHY..... 60

APPENDIX..... 64

TABLE OF CHARTS

Table 1	Breastfeeding Initiated	32
Table 2	Breastfeeding Continuation To Four Weeks	32
Table 3	Maternal Family Physician Visit	34
Table 4	Infant Visit To Family Physician	34
Table 5	Hospital Site	35
Table 6	Length of Stay	35
Table 7	Telephone Call From Public Health Services	36
Table 8	Acceptance Of Home Visit	37
Table 9	Mother's Rating Of Prenatal Health Services	38
Table 10	Mother's Rating Of The Labour And Delivery Services	38
Table 11	Mother's Rating Of In Hospital Post-Delivery Services	39
Table 12	Mother's Rating Of Community Health Services Post Discharge	40
Table A-1	Age	64
Table A-2	Ethnicity	64
Table A-3	First Live Birth	64
Table A-4	Marital Status	65
Table A-5	Family Income	65
Table A-6	Education	65
Table A-7	Chronic Health Problems Of Mother	66
Table A-8	Gestational Period Of Pregnancy	67

Table A-9	Mother's Medical Problems Postpartum	67
Table A-10	EPDS Scores	68
Table A-11	Maternal Hospital Readmission	68
Table A-12	Maternal Emergency Room Visit	68
Table A-13	Baby's Health	69
Table A-14	Baby's Health Problem	69
Table A-15	Baby's Weight (In Grams)	69
Table A-16	Baby's Hospital Readmission	70
Table A-17	Baby's Emergency Room Visit	70
Table A-18	Healthy Babies/Healthy Children Program Telephone Contact	71
Table A-19	Home Visit Offer	71
Table A-20	Other Visiting Nurse	71
Table A-21	Postpartum Support Group	72
Table A-22	Family Resources Centre Or Program	72
Table A-23	Canadian Prenatal Nutrition Program	72
Table A-24	Breastfeeding Services Or Clinic	73
Table A-25	Infant Development Program	73
Table A-26	Others	73

CHILDBIRTH: A MEDICAL PROBLEM OR A HEALTH CONCERN

A. INTRODUCTION

Childbirth was once a process of women helping women; it was a community event. During this time, most women gave birth at home, generally attended by midwives and occasionally by a physician. Childbirth was accepted as part of the normal life cycle, and family and friends supported women as they gave birth in their familiar environment, where they spent their daily lives. A portion of the evidence suggests that the popular birth culture of the early communities were very successful in the context of the time when it flourished, and lasted until the period between the two wars (Eberts, 1987).

Within the last hundred years the process of childbirth has become medicalized. Beginning in the mid-1800s, obstetrical care began to be overtaken by medicine. With this transition came many changes within the childbearing tradition. Firstly, the majority of pregnant women were no longer cared for by midwives in their homes; they were cared for by medical personnel in hospitals, segregated from their social supports and their families, to labour and deliver their children alone. Secondly, within this environment, pregnancy and childbirth was no longer viewed as a part of the normal life cycle, but as a pathological process that required close medical supervision to assure that mother and child survive the childbearing process. This resulted in maternity care being

overly controlled by predominantly male physicians. By the 1950s there were only fragments of the original birth culture left in Canada, mostly in areas where the population was too scattered to enable a doctor to make a living (Mason, 1987).

In the early 1970s, the midwifery movement began to emerge and by 1993, midwifery was established as a legitimate childbirth profession in Ontario. Since then, the number of midwives has increased, and this has allowed greater choice in childbirth care for women in Ontario. Today, in many parts of the province, women can choose the type of obstetric care they wish to have for their pregnancy, labour, delivery and post-partum care. But in spite of the increased number of options, a great proportion of women attempting to access a midwife in Ontario are unable to secure a midwife and must arrange for other maternity care.

In the present economic and political climate of cost-minimization and debt reduction, there is a huge push to provide the best health care services at the lowest possible cost to the health care system. Given the difference between the medical and midwifery approaches to maternity care it is important to determine the strengths and differences between the two options of care. In considering low-risk pregnancies, which of the two options of care provide the best health outcomes, provide the greatest patient satisfaction results? Are these results dependent upon socio-demographic variables or existing health status? What are the services utilization patterns of these different health care options? These questions will be explored within this thesis using the data TOMIS II study.

CHAPTER I: LITERATURE REVIEW

A. INTRODUCTION

In Ontario today, pregnant women mainly seek out obstetricians or midwives to provide care for their maternity needs. Each professional group works from a distinct professional philosophy and offers services based on its professional philosophy to the women that they serve. Some women's preference for care is more suited to one group of caregivers over the other, but in reality, we require both professionals in order to provide all pregnant women in Ontario the maternity services that they need. For example, it is very important to have obstetricians available to attend to women in premature labour, to women requiring emergency caesarean sections, or to women who either already have medical issues that are complicated by the pregnancy or have developed medical issues as a result of the pregnancy. It is also as important for women who wish to approach their pregnancy care as a normal process, requiring little if any medical intervention, that they be given the option to do so. While it is shortsighted to believe that as a society we do not require obstetricians because pregnancy is a normal process, it is just as myopic to believe that midwifes do not provide safe and professional service to the women that they care for.

Rather than being focused on whether it is obstetrics or midwifery that is the superior approach for all women's maternity care, it may be wise to consider how best to identify which services a woman may require during her pregnancy, labour, delivery, and post-partum and create an approach that allows women to access the care that they need without having to choose between one form of care or the other.

In order to fully understand the factors at play in this situation, it is important to be familiar with the history of childbirth in Canada, the medical and midwifery approaches to maternity care, and finally what the literature states that women want pertaining to their maternity care.

B. HISTORY OF MIDWIFERY IN CANADA

Up until the mid-nineteenth century, midwifery thrived in Canada (VanWagner, 1988). Midwifery existed among the European settlers, the aboriginal communities and operated through neighbourhood networks (Eberts, 1987). Most women gave birth at home, generally attended by midwives and occasionally by a physician. Childbirth was accepted as part of the normal life cycle, and family and friends supported women as they gave birth in the familiar environment where they spent their daily lives. There existed many positive elements of this birth culture, which included: 1) constant companionship by familiar women, who had also born children, 2) direct or indirect assistance from the woman's husband, 3) gifts of food, clothing and housework from the community, 4) a postpartum rest period from the mother, 5) a community fund of birth knowledge, including a small number of remedies in times of trouble, and 6) the consideration of such help as part of a network of "turn-about" help rather than a service requiring payment (Eberts, 1987).

Although these positive elements were significant, there also existed weaknesses in this culture of obstetrical care. These weaknesses included women being unprepared and alone for birth experience, and being confused and lacking confidence that sometimes resulted when settlers tried to transplant the medical routines that had been

performed by the doctor back to the wilderness (Eberts, 1987). The evidence suggests that the popular birth culture of the early communities were very successful in the context of the time when it flourished, and lasted until the period between the two wars (Eberts, 1987).

Beginning in the mid-1800s, when the medical take-over of obstetrical care began, midwifery was discredited and virtually eliminated in Canada (Van Wagner, 1988:115). In 1897, the Victorian Order of Home Helpers was created due to a concern of maternal and infant health. This group wanted to convey the message that childbirth needed to be handled by someone with specialized training and attempted to establish a program of lay midwifery care for rural women. This endeavour was unsuccessful due in large part to the opposition of the medical and nursing professions. This movement, which was created by Lady Aberdeen, threatened the doctor's long-term interests more seriously than any aspect of the existing birth culture (Mason, 1987:209). Later this group was renamed the Victorian Order of Nurses (VON) and were strictly forbidden from providing midwifery care in all but emergency situations.

Beginning in the 1920s, the landscape of the birth culture began to change. Obstetrics and Gynaecology became a recognized medical specialty, which viewed the birth process as "pathologic". This perspective resulted in an increase in the routine use of forceps, episiotomies and anaesthesia (Eberts, 1987) in the care of low and high-risk deliveries. In addition, modern hospitals were utilizing the newest scientific and technological interventions available. The modern antiseptic hospital offered women a

medical specialist attendant, safe and painless delivery and complete care of their newborn in an isolated, well-supervised nursery.

During the period from 1910 – 1950, great effort was employed to change women's expectations around their birth experiences (Mason, 1987). Trained nurses were involved in this promotion to re-educate the public in this matter. Nurses "painted a picture of a completely overhauled maternity care system, improved education facilities for nurses, and doctors, large-scale maternity hospital building projects, (and) conveniently located prenatal clinics" (Mason, 1987). By promoting this approach to health care and childbirth, nurses were able to assure their position in the emerging medical system by aligning themselves with the medical doctors.

One of the unfortunate effects of the public health crusade was the undermining of women's confidence about birth. Leading obstetricians announced that the modern woman needed all their interventions because women were dangerously close to being unfit for childbearing. These doctor's believed that women were psychologically unable to go through the agonies of labour and physiologically too constricted to allow the baby safe passage (Mason, 1987). Women began accessing more hospitalize births, which resulted in excessive use of caesarean operation and the routine use of chloroform. The majority of doctors adopted a variety of new and virtually untested anaesthetics encouraged by strong public approval to be daring in their innovations. Episiotomies and forceps became routine and caesarean birth gradually came to be seen as a more efficient way to extract a baby despite mortality rate four times that of vaginal births. In an effort to improve the morbidity and mortality rates compared to home births, hospitals in

Ontario imposed stringent controls on their maternity patients. Labouring women were strictly isolated from non-medical people and medical personnel, particularly nurses, redoubled their efforts to de-germ the woman and her environment (Mason, 1987).

By 1935, half the births in Canada took place in hospital and after this critical point was reached, it took only a little more than a decade to get most of the remaining pregnant women into hospital as well. There was no place for traditional birth culture in hospitals. By 1947, physicians advocated that the doctor must make the choice of birth location. The conditions of the doctor's choice were most assuredly those found in hospital and so by the 1950s there were only fragments of the original birth culture left in Canada, mostly in area where the population was too scattered for a doctor to be able to make a living (Mason, 1987).

In 1957, the Ladies Home Journal looked into the "tortures that go on in modern delivery rooms". Stories of doctors strapping mothers to the delivery table, isolating them during the labour and delivery, and slowing down the birth to wait for the doctor to arrive at the hospital were reported (Mason, 1987). At the end of the article two major changes were called for; first that the husbands be allowed into the delivery room so that they could comfort and protect their wives and secondly that an immediate program of midwifery training begin all over the United States (US). This signalled the beginning of the movement away from the medicalized form of birth. This occurred in Canada and the US.

In the early 1970s, an Ontario appointed committee examined the delivery of health care at the beginning of Medicare. This committee foresaw "nurse-midwives as

clinical specialist in nursing...under the direction of a physician" (Boureault and Fynes, 1997:1057) being incorporated into the healthcare system. The Registered Nurses Association of Ontario (RNAO) supported the development of nurse-midwifery and proposed negotiations between the College of Nurses, the medical profession and the Ontario government. In response to charges of practicing without a license, Canadian lay midwives organized around the issue of legalization; they formed the Ontario Association of Midwives (OAM) in 1981. The mandate of the OAM included achieving legal recognition for lay midwives, increase accessibility to midwifery care by becoming incorporated into, and funded by the provincial health care system.

In 1983, the Ontario government initiated the Health Professions Legislation Review (HPLR) (Bourgeault, 2000), and the OAM made contact with the HPLR to review the regulation of their profession. Around the same time, consumer supporters organized the Midwifery Task Force of Ontario (MTFO) (Bourgeault, 2000) and made every effort to increase public awareness of the midwifery issues and the recognition of midwifery. The Health Professions Legislation Review committee recommended to the Minister of Health, Murray Elston, in the fall of 1985, that the Ontario government regulate and integrate midwifery into the Ontario health care system (Bourgeault & Fynes, 2000:241). The health minister announced on January 23, 1986 that the Province of Ontario would integrate midwifery into the Ontario health care system and recognize it as a regulated health profession. "On December 31, 1993, the Midwifery Act, as part of the Regulated Health Professional Act (RHPA), was proclaimed and midwifery officially

became a self-regulating and fully-funded health profession in Ontario" (Bourgeault and Fynes, 1996/97:249).

By November 2000, a severe shortage of maternity and newborn care professionals was identified as an up and coming reality in Canada (SOGC, 2000). This concern was brought about due to shortages in maternity and newborn care professionals, capacity deficiencies in the delivery system (human and financial resources, governance, technological, and information systems), lack of efficient and joint use of caregiver skills in all settings, and the discrete education of care professionals (SOGC, 2000). Since the current model of maternity care was not satisfying the current needs, a new sustainable model needed to be created. There was a fundamental agreement that pregnancy and child birth were normal life events with uncertainties and that the key to a sustainable model of maternity and newborn care would include accessibility, best evidence practice, informed choice, family-centred, community-based, respect and collaboration, trust among all, flexible and competency-based roles, quality of work for care givers and learning together (SOGC, 2000). In March 2003, the Society of Obstetricians and Gynaecologists of Canada (SOGC) initiated a new, historically significant, policy. In keeping with the principles noted above, the Society of Obstetricians and Gynaecologists of Canada announced that it "supports the continuing process of establishing midwifery in Canada as regulated, publicly funded profession with access to hospital privileges" (SOGC, 2003).

C. THE MEDICAL PERSPECTIVE ON CHILDBIRTH

In their article, *The Politics of Childbirth,* Weitz and Sullivan present a physician's perspective of childbirth. The authors indicate that for many years the male dominated medical profession has maintained that many of women's physiological processes (e.g. menstruation, menopause, and childbirth) are dangerous and pathological (Weitz, 1986, Fox and Worts, 1999). In the premier issue of the *American Journal of Obstetrics and Gynecology,* Joseph DeLee writes that "(l)abor has been called, and still is believed by many to be, a normal function...and yet it is a decidedly pathological process (DeLee, 1920:39-40). This underlying foundation of the medical approach to childbirth has resulted in "the active medical management of childbirth" (Weitz and Sullivan, 1986:168). In particular, the medical perspective of childbirth is based on the argument that "childbirth is normal only in retrospect" (Weitz and Sullivan, 1986:168) and as a result, physicians are trained to search for physical pathology and for physical (rather than social or emotional) causes of any problem. The medical perspective of care sees clients as suffering from discrete physical and/or mental impairments that are in need of repair. The initial impairment is the focus of the treatment provided within a medical approach and often ignores quality-of–life issues (Watt, 1999:364-5).

In the article by LoCicero et al. (1993), the authors state that obstetricians, from their experiences, conclude that birth is dangerous for mothers and babies, and that obstetric care is necessary to insure health even in apparently low risk situations. Antenatal care entails an understanding of the complex physiology of pregnancy and interactions with medical complications that can coexist or arise "de novo" (Ramsay,

2003:327). The active management approach to care involves intervention that uses "the systems and resources of the hospital setting, which encompasses a concentration of technology, highly trained personnel, easy access to x-ray and laboratory services, a full range of hotel services, and 24-hour operational schedule" (Watt et. al., 1999:364).

Although medical intervention is very useful and even life saving in certain circumstances LoCicero et al. (1993) remind that several of the medical interventions once considered useful and applied on a routine basis have been found to be potentially harmful, and have been eliminated from universal or frequent practice in obstetrics. The author also questions that with "the change in standards of care that have led to the elimination of such practices, it is not hard to imagine that some procedures that are now routine might one day also be discontinued (LoCicero et al., 1993:1262).

The medical community has expressed specific views on the profession of midwifery. Annadale (1988) provides a review of the medical profession's lack of support for the profession of midwifery. This article provided accounts of women and midwives testifying that hospital obstetricians told women that birth centre care was "unsafe" and "unwise". In addition, the authors recounted the subtle pressure from some hospital nurses who remarked, for example, that women could have pain medicine if they were in the hospital.

Throughout the pursuit of the legalization of midwifery, the powers of the medical profession and formal state powers (in legislation and social policy) served to curb and weaken initiatives for the reinstatement of midwifery services across Canada (Burtch, 1994:10). Legal barriers to midwifery practice support the professional interests

of organized medicine, (Burtch, 1994:13). Organized medicine has been involved in derailing and discouraging the midwifery movement for many years. The doctors have been instrumental in having laws passed to prevent midwives from assisting in childbirth and have then charged them for participating in the birth of children without a license.

The Ontario Medical Association expressed the view that midwifery services were not needed in the province. In 1982-83, the College of Physicians and Surgeons of Ontario (CPSO), the medical regulatory body, strongly discouraged physicians from attending or providing backup support for planned home births. The CPSO argued that midwifery would create a duplication of services and significant increase in costs if midwifery were to be integrated into the health care system. The CPSO suggested that it would only be acceptable if midwives were registered practitioners who would be 'restricted to practice in association with physicians' (Bourgeault and Fynes, 2000:237). During this time, the Canadian Nursing Organization stated that midwifery "is not a separate and distinct profession from nursing; that midwifery should come under the aegis of the nursing profession; and did not support or encourage the establishment of lay midwifery" (Bouregeault and Fynes, 2000:237).

D. THE MIDWIFERY PERSPECTIVE ON CHILDBIRTH

The World Health Organization defines a midwife as,

> A person who, having been regularly admitted to a midwifery educational program duly recognized in the jurisdiction, in which it is located, has successfully completed the prescribed course of studies in midwifery and has acquired the requisite qualifications to be registered and/or legally licensed to practice midwifery.
> The sphere of practice: she must be able to give the necessary supervision, care and advice to women during pregnancy, labor

> and postpartum period, to conduct deliveries on her own responsibility, and to care for the newborn and the infant. This care includes preventive measures, the detection of abnormal conditions in mother and child, the procurement of medical assistance, and the execution of emergency measures in the absence of medical help.
> She has an important task in counseling and education – not only for patients, but also within the family and community. The work should involve antenatal education and preparation for parenthood and extend to certain areas of gynecology, family planning and childcare.
> She may practice in hospitals, clinics, health units, domiciliary conditions or any other service. (Kitzinger, 1991:ix)

The midwifery model in Ontario stresses that birth is a normal physiological process and stresses education, informed choice and knowledge of the risks and benefits of obstetrical procedures (Van Wagner, 1988, Fox and Worts, 1999). The midwife is the primary caregiver of low-risk childbirth and works in either the community or the hospital settings. "Her focus on continuity and care appropriate to the values and culture of the woman and her family is in marked contrast to the impersonal and fragmented care routinely available from the medical profession" (Van Wagner, 1988:115). Contrary to the thirty caregivers a woman may see in a hospital setting, in a midwifery setting women are cared for by two or three midwives throughout her entire pregnancy, labour and postpartum period.

Weitz and Sullivan (1986) provide supporting statements in their article. The authors state that midwives view childbirth as a normal, safe process in the average situation. Midwives believed that they provided better care than physicians did for most mothers and babies. The midwives believed they provided a less distressing and alienating experience for the mother. Subsequently, the midwives believe, as a result of

their definition of childbirth, that midwifery care is better than medical care for most mothers and babies.

According to Weitz and Sullivan (1986), midwives also accuse physicians of treating their clients in a highly routine, alienating and brisk manner, which ignored the emotional aspects of childbirth, kept pregnant women from understanding and controlling their changing bodies and weakened family ties. In addition to these concerns Zadoroznyj (2000) states that "(f)eminist and consumer advocate groups share concerns about the rise of technical interventions in birthing, as well as with the apparent disempowering of birthing women, whose subjective experience of birth, they argue, has been rendered less consequential than technical issues such as safety" (177).

E. STANDARDS OF MATERNITY CARE IN ONTARIO

It has been established that in Ontario, women have the option of pursuing either a medical or a midwifery approach to their maternity care. Although both of these approaches result in women receiving care during their pregnancy, childbirth and post-partum, the means to which these approaches achieve these ends differ considerably. With this fact in mind, it is important to establish the standards of care that every woman should receive (entitled to) when receiving care. The World Health Organization (WHO) provides guidelines to assist in the understanding of normal labour and what is expected in the care of women during labour. The WHO defines normal labour as a pregnancy of more than 37 competed weeks to less than 42 completed weeks' gestation, with a singleton fetus, vertex presentation, and spontaneous onset of labour. In addition to stating the criteria for identifying a normal birth, the WHO also declares that a skilled

caregiver needs to be in attendance during each birth (Chalmers et. al., 2001). Furthermore, the WHO has comprised ten principles of perinatal care that they endorse. These principles are:

1. Care for normal pregnancy and birth should be demedicalized
2. Care should be based on the use of appropriate technology
3. Care should be evidence-based
4. Care should be regionalized
5. Care should be multidisciplinary
6. Care should be holistic
7. Care should be family-centred
8. Care should be culturally appropriate
9. Care should involve women in decision making
10. Care should respect the privacy, dignity and confidentiality of women (Chalmers & Porter, 2001:82).

The WHO places great emphasis on respect, support and care for the pregnant and birthing women. In addition, WHO stresses effective perinatal care, psychologically sensitive, multi-disciplinary, and culturally appropriate care is a priority (Chalmers et. al., 2001: 206). It is the intention of the WHO that this new approach will balance and combine with the past decades of technological development and emphasis in perinatal care to ensure not only good practice but also good care for childbearing women and families (Chalmers et. al., 2001:206-7)

Although the World Health Organization has set out these guidelines for maternity care, the implementation of these guidelines does not always occur. As a result, it is important to consider the philosophies under which these guidelines are implemented and review whether women do in fact benefit from these guidelines. In Canada, the legalization of midwifery services has not occurred in all

provinces/territories. This results in the primary maternity care available to women in those regions being provided by doctors rather than midwives and being medically oriented. In addition, guidelines that are routinely satisfied through the midwifery approach to care, such as a holistic approach to care, family-centred care, culturally appropriate care, which involves women in decision making and care which respects the privacy, dignity and confidentiality of women do not approach the standard intended by the guidelines.

In Ontario specifically, midwifery services are available to pregnant women who can access them. However, according to the Midwifery Services of Durham, "in Ontario one woman is turned away from midwifery care for every woman that is booked." (Midwifery Services of Durham, 1994). This translates into women being unable to access perinatal care that mostly satisfies the WHO guidelines for care.

F. WOMEN'S PERSPECTIVE ON MATERNITY CARE

There is much written in the literature concerning women and maternity care. Women's choice in maternity care is one of a number of areas discussed in the literature. It may seem obvious that women in Ontario have the option of choosing a medical or midwifery approach to their maternity care, but issues such as limited information and access to care, influence women's scope of choice. Women often have insufficient information about what type maternity services that midwives provide (Zadoroznyj, 2000). Consequently, women lack the full scope of knowledge needed to make an informed decision regarding their maternity care. Secondly, the demand of midwifery services in Ontario often exceeds the supply of midwives (Midwifery Services of

Durham, 1994). In some cases, midwifery clinics have to turn away potential clients because they do have enough midwives to fill the requests for this service (Wendy Katherine, Ministry of Health, Government of Ontario, October, 18, 2002). In other areas of the province of Ontario, midwifery services are not available because a clinic has not been established in that area (e.g. Windsor), or due to difficulty gaining hospital privileges to practice midwifery (Wendy Katherine, October 18, 2002). This results in many women in Ontario being unable to access midwifery services due to insufficient supply of midwives and subsequently restricted choice of maternity services for these Ontario women.

In addition to choice of maternity care, there is significant literature in recent years regarding women's satisfaction, or dissatisfaction of their maternity care (Homer 2002). In a qualitative study of 77 women, Fowles (1998) reports those women's positive responses are related to who helped them in labour and to the context of the experience and frustration, which related to pain, negative reactions of health caregivers; lack of control, and lack of knowledge. This study reported that 42% of the participants were dissatisfied with some aspect of their birth experience. This is a significant finding, since patient satisfaction, is a measurement of a patient's opinion and is correlated to medical outcome and the process of medical care (Williams, 1994).

Throughout the literature, a number of areas have been identified to promote satisfaction in women's maternity experience. These included, fulfilling women's expectations about childbirth (Tumblin, 2001), women knowing their caregiver (Kaufman 2000), maintain control of their childbirth experience (Homer, 2002), less

intervention (Hannah 1999), developing a "special" trusting relationship with the caregiver (Fraser 1999), and being assisted coping with the stress of labour using a high degree of interpersonal skills, women's satisfaction with their birth experiences increased (Tumblin 2001). In addition, factors that cause dissatisfaction are also discussed in the literature and they include lack of control during their labour and delivery (Homer 2002, Fowles, 1998), lack of continuity of care (Homer, 2002), lack of involvement in decision-making (Homer 2002), insufficient information (Homer 2002), perception that caregivers are unhelpful (Homer 2002, Fowles, 1998).

Women's perception of how they expect their maternity care to be is a factor in how women assess care and whether they are satisfied with their maternity care experience. The evidence shows that satisfaction with their birth experiences rises when women's expectations are met and when they are cared for in a respectful, thoughtful manner (Tumblin, 2001). Tumblin (2001) surveyed 57 women in their third trimester of pregnancy and asked the following questions: "What do you think your nurse's role will be during labor and delivery? You may list as many things as you wish". In addition, the mothers were asked if this was their first birth. From the 57 surveys, 174 items were obtained. Approximately 29 percent of the nursing tasks listed by the nulliparous women were related to providing them with physical comfort and emotional support, 24 per cent related to providing support through information, almost 21 percent were related to providing technical nursing care, and 21 percent related to monitoring of the baby, mother, or labour progress; approximately 5 percent related to indirect (outside of the room) care.

In addition to perceptions of maternity care, continuity of care influences women's satisfaction in their maternity care. Women who had continuity of caregiver during their labour had a significantly higher sense of 'control' and more positive birth experience compared to women who had an unknown caregiver (Homer 2002). Control was an important predictor of a positive experience, and together with lower level of obstetric intervention during labour and birth were the most significant predictors of a better experience (Homer 2002).

Homer (2002) reports a link between continuity of care and control, as well a link between lower intervention and control. Women who had experienced continuity of care or less intervention in their childbirth experience felt that they had better control over the decisions that were made during their maternity care. Gibbens (2001) reported that women want to take an active part in their labour and being in 'control' of this process. Women state that the support of their partners, the positive attitudes of the midwives caring for them during pregnancy and labour, information given during pregnancy and labour, and being able to make and be included in the decision making during labour help to make this possible.

However, what exactly do women want to control? Fox and Worts (1999) address this question and reveals that control can mean different things. Firstly, control can refer to control over the decisions that were made and even the course of their labours and deliveries. Secondly, control can simply refer to remaining conscious, rational and aware of what was happening. Thirdly, for some women, control can refer to keeping on top of the pain and thus remaining "human". Medical intervention represented the means

to achieve a sense of control. Lastly, some women suggest that control means that hospital staff is assuming responsibility for meeting their needs and providing ample support.

Just as there are varying descriptions of the control that women want during their maternity care, there are also different levels of medicalization that women want. Although there is considerable literature suggesting that women are more satisfied with their childbirth experience when there is less medical intervention (Albers et al., 1999, Hannah, 1999), there is also a segment of this population that want medical intervention during childbirth. A portion of the literature contends that there are many women across social classes that welcome medical intervention, if not management, and are quite satisfied with hospital services (Fox and Worts, 1998, Sadler et. al., 2001). Fox and Worts (1998) argue that women's reactions to their birthing experiences indicate that the absence of medical intervention does not necessarily make for a positive empowering experience and for some women having control over the process and the outcome was critical. These authors conclude that "the absence of medical intervention during childbirth does not always produce a sense of efficacy; nor does medical intervention necessarily engender alienation" (335). For some women, having control over the process and the outcome was critical. For others, the support they received modified the impact of hospital practices that eroded their control. What mattered for other women were control over pain and medical responsiveness to that need. For some the outcome was all that mattered.

The literature suggests that these professions have developed a competitive identity about which approach provides the best alternative to maternal care. Is it possible for a model of maternity care to be developed that accentuates the advantages of each approach to care, while minimizing the shortcomings of each approach?

G. COMPARING OPTIONS

1. Health Outcomes

There is extensive literature on midwifery-managed and physician-managed maternal health outcomes. The literature contends that similar or better positive outcomes result when midwifery-managed care is compared with physician managed care for low-risk women (American Public Health Association, 2001, Law and Lam, 1999, Oakley, 1996). In a study in Scotland (Turnbull et al., 1996), researchers examined two maternity-care programs, one with midwife, obstetrician and family physicians and the other solely with midwives. This study showed that maternal and infant outcomes were equal or better in the midwife run program. In addition this group reported women who had less visits to the doctor, required less medical treatment and greater satisfaction than the women in the team approach to maternity care.

In addition, a Canadian study (Harvey, 1996) demonstrated that nurse-midwives can provide safe and effective care for low-risk women. Comparison with standard physician care demonstrated a lower application of technologic assessment, fewer interventions, shorter hospital stays, fewer neonatal intensive care unit admissions, and less maternal morbidity in the nurse-midwife group, even with the increased pressure to

use interventions that was present in the tertiary care environment. In the authors conclusion they suggested that more extensive use of midwives in the Canadian health care system is an appropriate use of health care dollars.

2. Service Utilization

In this period of cost minimization and government cut-backs, health care systems are being asked to minimize costs while improving effectiveness in their service (Watt et al., 1999). Thus it is important to be familiar with the factors that contribute to service utilization patterns of health care services.

Kralj (1998) argues that there are several factors that contribute to utilization patterns in health care services. These are physician characteristics, public demand for medical services, changing population demographics, epidemiological trends, and more informed and demanding patients. In addition, medical services have been noted across socio-economic groups and so it can be argued that changes in socio-economic circumstances will affect utilization, introduction and/or expansion of various programs by government exert upward pressure on utilization, historic utilization per capita grew at an annual compound rate of 2.5 percent, while utilization per physician rose at a rate of 1.2 per cent per year.

3. Patient Satisfaction

Satisfaction with health care is "the belief that the care possesses certain attributes – components/dimensions – and the patient's evaluation of those attributes. Patient satisfaction thus becomes defined as "the individual's positive evaluation of distinct

dimensions of health care" (Sitza and Wood, 1997: 1833). Satisfaction ratings involve three variables: the individual preference of the patient, the patient's expectations, and the actual experience of the care obtained (Sitza and Wood, 1997). These variables are dependent upon patient variables (patient expectations and characteristics and psychosocial determinants) and care variables (e.g., interpersonal manner, technical quality of care, efficacy/outcome of care, continuity of care) (Sitzia and Wood, 1997). Throughout the literature advantages of midwifery services include continuity of care, higher levels of birthing women's satisfaction, lower intervention rates, and cost reduction without any apparent adverse effects in terms of mortality or morbidity (Butler et. al. 1993, Waldenstrom & Nilsson, 1993, Rowley et. al., 1995, Sheilds et. al. 1998). In a quantitative study of 200 women, Harvey et al. (2002) hypothesized that women who received midwifery care rather then physician-care would be more satisfied with their birth experience. The authors reported that women with midwifery care reported significantly higher rates of satisfaction with the care they received at each point of measurement, and "more satisfaction with the birth experience than women who received physician care" (266).

This leads to the primary research question of this thesis; what differences are there in health outcomes, service utilization, and patient satisfaction, between women who are cared for by either physicians or midwives and vaginally deliver a singleton healthy baby in hospital? This question generates several hypotheses to explore in this study. The hypotheses are:

1. Women in the midwifery group are older than women in the physician group;
2. Women being cared for by midwives will consist of a greater number of women that report being an "other Canadian";
3. Women being cared for by midwives will have a lower incidence of "first live birth";
4. Women in the midwifery group will be in partnered relationships;
5. Women in the midwifery group would be of a higher income level;
6. Women in the midwifery group would have higher educational levels;
7. Women with chronic health problems would choose physician services for maternal and infant care more than midwives;
8. There will not be any significant differences in health outcomes between the midwifery and physician groups of women;
9. That midwifery services is an add-on, service that is more expensive to deliver children;
10. That midwifery is a duplication of already existing maternity services (and therefore an additional expense to the already strapped health care system); and,
11. Women experience greater satisfaction with midwifery services versus physician services.

CHAPTER II- METHODOLOGY

A. STUDY DESIGN

The TOMIS II study builds on an earlier study done in 1998-99 exploring postpartum health and service utilization and expenditures of women and newborn infants of differing characteristics and living in various Ontario communities with diverse characteristics. The major research questions of the TOMIS II study were to determine:

(a) The direction and magnitude of any changes in health outcomes, service utilization and costs of care for mothers and newborn infants during the first month post-hospital discharge, following the implementation of the universal HBHC program; and,

(b) The characteristics of postpartum women, newborn infants and program implementation structures associated with specific health outcomes, service utilization patterns and costs of care following the implementation of the universal HBHC program, and how those compare with TOMIS findings (Sword, Watt, Kruger, 2000).

The study design used in TOMIS II was a cross-sectional survey of mothers who delivered their infants in hospital and participated in a follow-up four weeks after their discharge from hospital. This sample was composed of the first 250 eligible, consenting women and their infants at five hospital sites, for a total sample of 1250 women/infant pairs. The five hospital sites used in the study were not identified, however demonstrated differing characteristics, such as size, geographic location, teaching or regional centre, urban, rural or metropolitan catchment area, access to varying health and social services,

and annualized rate of delivery were disclosed (Sword et al. 2001). Women were eligible to participate in this study if they: had given birth vaginally to a single live infant;

(a) were being discharged from hospital at the same time as their infant;

(b) were assuming care of their infant at the time of discharge; and

(c) if they were competent to give consent to participate in the research. (TOMIS, 2000)

Infants who required admission to a neonatal intensive care or special care nursery for more than 24 hours and mothers who were unable to communicate in one of four languages were excluded from the sample. The study did provide data collection in English, French, Spanish and Cantonese and interviewer with specific language skills were hired to include all eligible, consenting participants in the research (Sword, Watt, Kruger, 2000).

The methodology for this study is a secondary analysis of the data from the TOMIS II study. The methodology used in the TOMIS II study matches the methodology used in the TOMIS study (Sword et al., 2001), which combines quantitative and qualitative approaches in order to allow for more comprehensive understanding issues (Sword et al., 2000). The majority of the data was collected using a comparative cross-sectional survey design with longitudinal follow-up at four weeks post-hospital discharge. The sample used in this thesis study is an aggregate data sample. An analysis of a sample of this nature is possible due to research which indicated that the outcome variables were not highly correlated within each site. Instead, the research indicated that

substantial variability occurred in the outcome variables within each site and that when the data were combined for all sites, it was determined that site was not statistically associated with our outcome variables (Sword, Watt, Kruger, 2003)

Looking at the data comparing women who had midwives and women who did not have midwives in terms of health outcomes, service utilization, patient satisfaction and cost-effectiveness.

B. MEASURES

1. Health Outcomes

The TOMIS II study considered whether there was a clinically important change in health outcomes. This was accomplished by considering the differences in the

(a) gestational term of pregnancy

(b) delivery weight of baby

(c) mother's assessment of maternal and baby's health

(d) report of postpartum medical problems

(e) infant's problems since birth

(f) prevalence of postpartum depression,

(g) prevalence of breastfeeding discontinuation, and

(h) emergency room visits for mother or infant

(i) readmission of mother or baby into hospital (Sword et al, 2000).

2. Service Utilization

The TOMIS II study considered whether there were a clinically important change in service utilization. This was accomplished by considering the differences in the

(a) utilization of telephone nurses,

(b) utilization of visiting nurses,

(c) utilization of postpartum support group,

(d) utilization of family resources centre,

(e) utilization of infant development program,

(f) utilization of breast-feeding services,

(g) utilization of Canadian Prenatal Nutrition Program,

(h) utilization of Healthy Babies, Health Children Program,

(i) length of stay in hospital,

(j) utilization of family physician for mother or baby, and

(k) hospital site (Sword et al, 2000).

3. Patient Satisfaction

The TOMIS II study explored what women's satisfaction was with the health care system while they were pregnant, during their labour and delivery, during their stay on the maternity ward and in the community after discharge from hospital.

(a) Overall, how they would rate the health services in the community (i.e., physician office visits, clinics visits, prenatal services) when you were pregnant?

(b) Overall, how would they rate the services in hospital during labour and delivery?

(c) Overall, how would they rate the services in hospital, after delivery (i.e., on the maternity ward)?

(d) Overall, how would they rate the health services in the community (i.e., health provider office visits, clinics, home visiting services) after discharge from hospital? (interview schedule)

C. STATISTICAL ANALYSIS

The data from both the self-administered and telephone questionnaires were analyzed using SPSS 11.5. Frequency counts and percentages or means and standard deviations were calculated as appropriate to describe the direction and magnitude of the differences in health outcomes, service utilization, and patient satisfaction between samples. Comparative statistics were used to determine if there were any differences between the two groups and to determine if this difference was statistically significant. More specifically, independent t-tests or analysis of variance was used to examine differences in means.

CHAPTER III– FINDINGS

A. COMPARISON AT BASELINE OF SOCIO-DEMOGRAPHIC CHARACTERISTICS AND CHRONIC HEALTH ISSUES

The data examined the socio-demographic and chronic health composition of the midwifery and physician caregiver sample to determine if there were any statistically significant differences between these two groups. The variables considered were age, ethnicity, parity, marital status, the income and education levels of mothers, and existing chronic health problems.

The age variable was evaluated by using continuous ranges of under 20 years of age, between 20.01 and 29.99 years of age, between 30.00 to 39.99 years of age, and 40 years and above. (See Table A-1). Ethnicity was identified by the respondent as being Canadian or not. (See Table A-2). In order to determine the parity of each woman, the women were asked if this was their first live birth. (See Table A-3). The martial status of each participant was based on whether the women identified themselves as involved in a partnered relationship. (See Table A-4). The income levels were grouped into continuous groups of under $19,999, between $20,000 and $59,999, and over $60,000. (See Table A-5) Highest educational level responses were grouped into the following categories: up to high school; some community college or university; and degree-community college, bachelor or graduate. (See Table A-6) When considering the chronic health problems for which women were currently receiving medical care, the midwifery group answered "yes" 91% of the time and the physician group reported "yes" 92.6% of

the time (See Table A-7). There were no statistically significant differences found between the two groups with regard to any of these variables.

The focus of this study then switched to determining whether there were any similarities or differences between the two groups under consideration in relation to the health outcomes of mother or infant, service utilization and patient satisfaction.

B. HEALTH OUTCOMES

In relation to health outcomes, a number of variables were considered. These included mother's assessment of mother and baby's health status, gestational term of the pregnancy, infant health problems since birth, delivery weight of baby, reports of post-partum medical problems, initiation of breastfeeding, breastfeeding continuation through 4 weeks post discharge from hospital, EPDS scores, readmission to hospital for mother or infant, and emergency room visits for mother or infant,.

1. Mother

Several variables were considered to explore the differences between the health outcomes of the women cared for by midwives and those cared for by physicians. Gestational period of pregnancy, mother's medical problems postpartum, EPDS scores, maternal hospital readmission, and maternal emergency room visit were not found to differ significantly between the women cared for by midwives and those care for by physicians (See Table A-8 to A-12). There were a few variables that differed significantly between the groups.

The variable "any form of breastfeeding initiated" revealed that 98.7% of mothers initiated breastfeeding in the midwifery group compared to 86.0% in the physician group. This difference was found to be statistically significant.

Table 1
Breastfeeding Initiated

	Yes	No	Total
Midwife	77	1	78
	98.7%	1.3%	100.0%
Physician	1005	163	1168
	86.0%	14.0%	100.0%
Total	1082	164	1246
	86.8%	13.2%	100.0%

Chi-Square = 10.275; df = 1; p = 0.001.

When the mothers were asked if they were still breastfeeding 4 weeks after discharge, 94.5% of the women cared for by midwives indicated that they were, while 82.8% of those care for by physicians were still breastfeeding. This difference was found to be statistically significant.

Table 2
Breastfeeding Continuation To Four Weeks

	Yes	No	Total
Midwife	52	3	55
	94.5%	5.5%	100.0%
Physician	610	127	737
	82.8%	17.2%	100.0%
Total	662	130	792
	83.6%	16.4%	100.0%

Chi-Square = 5.174; df = 1; p = 0.023.

2. Infant

Several variables were considered to explore the differences between the health outcomes of the infants of women cared for by midwives and those cared for by physicians. Maternal assessment of baby's health, baby's weight, baby's hospital readmission, and baby's emergency room visit were not found to differ significantly between the women cared for by midwives and those care for by physicians (See Tables A-13 to A-17).

C. SERVICE UTILIZATION

Several variables were considered to explore the differences between the service utilization patterns of the women cared for by midwives and those cared for by physicians. The differences in service utilization of visiting nurses, telephone nurse, other care provider, postpartum support group, family resources centre or program, Canadian Prenatal Nutrition Program, breastfeeding services or clinic, infant development program and others were not found to differ significantly between the women cared for by midwives and those care for by physicians (See Table A-20 to A-28,). There were a few variables that differed significantly between the groups.

When the study considered the pattern of family physician visits it revealed that within the midwifery group 14.0% of mothers used this service, while in the physician group 25.7% of mothers visited their family physician. This difference was found to be statistically significant

Table 3
Maternal Family Physician Visit

	Yes	No	Total
Midwife	8	49	57
	14.0%	86.0%	100.0%
Physician	214	619	833
	25.7%	74.3%	100.0%
Total	222	668	890
	24.9%	75.1%	100.0%

Chi-Square = 3.871; df = 1; p = 0.049.

When the study considered the pattern of family physician visits pertaining to infants, it revealed that within the midwifery group 40.4% of infants used this service, while in the physician group and 76.7% visited their family physician. These differences in the results of the variables were found to be statistically significant.

Table 4
Infant Visit To Family Physician

	Missing	Yes	No	Total
Midwife	0	23	34	57
	.0%	40.4%	59.6%	100.0%
Physician	3	639	191	833
	.4%	76.7%	22.9%	100.0%
Total	3	662	225	890
	.3%	74.4%	25.3%	100.0%

Chi-Square = 38.141; df = 2; p = 0.000.

The data indicated that there existed significant differences between the sites that this study was conducted. Although the distribution of physicians were uniform across the five sites, the utilization of midwifery services varied with site three accounting for 35.9% of the midwifery births while site one only accounted for 6.4% of births.

Table 5
Hospital Site

Site No.	1	2	3	4	5	Total
Midwife	5	16	28	12	17	78
	6.4%	20.5%	35.9%	15.4%	21.8%	100.0%
Physician	245	234	222	238	233	1172
	20.9%	20.0%	18.9%	20.3%	19.9%	100.0%
Total	250	250	250	250	250	1250
	20.0%	20.0%	20.0%	20.0%	20.0%	100.0%

Chi-Square = 19.225; df = 4; p = 0.001.

The length of stay between midwifery based services and physicians were significantly different. In particular, 15.8% of women who used midwifes were discharged from hospital within 12 hours of their delivery, whereas only 1.1% of the women using physician chose this option.

Table 6
Length of Stay in Hospital

	< /= 24 hrs	25 -48 Hrs	49 - 60 hrs	> 60 hrs	Total
Midwife	21	27	5	4	57
	36.9%	47.3%	8.8%	7.1%	100.0%
Physician	167	447	115	104	833
	20.1%	53.7%	13.8%	12.6%	100.0%
Total	188	474	120	108	890
	21.1%	53.2%	13.5%	12.1	100.0%

Chi-Square = 61.861; df = 9; p = 0.000.

Other measures of service utilization were available from the study.

Another area considered as a measure of service utilization involved the Healthy Babies, Healthy Children (HBHC) program. This study considered whether there were any differences between the service utilization patterns of women who used midwifes and

those that used physicians to deliver their babies. The first question posed asked if the women received a follow-up call from public health.

The women in the midwifery group reported that 69.6% of them received a phone call while 91.4% of the women in the physician group reported receiving this call. The difference in these values was found to be statistically significant. (See Table A-18).

Table 7
Telephone Call From Public Health Services

	Yes	No	Total
Midwife	39	17	56
	69.6%	30.4%	100.0%
Physician	748	70	818
	91.4%	8.6%	100.0%
Total	787	87	874
	90.0%	10.0%	100.0%

Chi-Square = 27.788; df = 1; p = 0.000.

The women were then asked if a home visit was offered to them. The midwifery group indicated that 94.9% were offered a home visit. The physician group reported that 93.6 % of the women were offered a home visit. This difference is not statistically significant. (See Table A-19).

The last question pertaining to this issue asked whether the women accepted the offer of a home visit. The women in the midwifery group reported accepting this offer 32.4% of the time, while the physician group reported accepting this service 60.0% of the time. This difference was found to be statistically significant.

Table 8
Acceptance Of Home Visit

	Yes	No	Total
Midwife	12	25	37
	32.4%	67.6%	100.0%
Physician	420	280	700
	60.0%	40.0%	100.0%
Total	432	305	737
	58.6%	41.4%	100.0%

Chi-Square = 11.010; df = 1; p = 0.001.

D. PATIENT SATISFACTION

Lastly, the study considered the four measurements of patient satisfaction collected from the mother's questionnaire. The first question asked women how they would rate the health services in the community while they were pregnant.

The women in the midwifery group reported the following values 71.9% excellent, 21.1% good, 1.8% fair and 0% poor. The physician group reported 45.0% excellent, 40.9% good, 6.1% fair and 1.8% poor. These differences were found to be statistically significant.

Table 9
Mother's Rating Of Prenatal Health Services

	Excellent	Good	Fair	Poor	Didn't use any prenatal services	Total
Midwife	41	12	1	0	3	57
	71.9%	21.1%	1.8%	.0%	5.3%	100.0%
Physician	375	341	51	15	44	826
	45.0%	40.9%	6.1%	1.8%	5.3%	100.0%
Total	416	353	52	15	47	883
	46.7%	39.7%	5.8%	1.7%	5.3%	100.0%

Chi-Square = 16.832; df = 5; p = 0.005.

The second question asked the women to rate the services they received in hospital during labour and delivery. The midwifery group of women reported the following distribution of satisfaction, 82.5% excellent, 12.3% good, 3.5% fair, and 0.0% poor. The physician group reported the following results, 63.5% excellent, 27.7% good, 6.6% fair, and 1.3% poor. These differences were found to be statistically significant

Table 10
Mother's Rating Of The Labour And Delivery Services

	Excellent	Good	Fair	Poor	Don't know	Total
Midwife	47	7	2	0	1	57
	82.5%	12.3%	3.5%	.0%	1.8%	100.0%
Physician	529	231	55	11	0	826
	63.5%	27.7%	6.6%	1.3%	.0%	100.0%
Total	576	238	57	11	1	882
	64.7%	26.7%	6.4%	1.2%	.1%	100.0%

Chi-Square = 24.366; df = 5; p = 0.000.

The third question asked the women to rate the services in hospital, after delivery. The midwifery group of women reported the following data, 50.9% excellent, 21.1% good, 12.3% fair, and 3.5% poor. The physician group reported the following results, 37.2% excellent, 40.0% good, 16.4 % fair, and 5.0% poor. These results were found to be statistically different.

Table 11
Mother's Rating Of In Hospital Post-Delivery Services

	Excellent	Good	Fair	Poor	Didn't stay in hospital after delivery	Total
Midwife	29	12	7	2	7	57
	50.9%	21.1%	12.3%	3.5%	12.3%	100.0%
Physician	310	333	137	42	3	835
	37.2%	40.0%	16.4%	5.0%	.4%	100.0%
Total	339	345	144	44	10	882
	38.1%	38.8%	16.2%	4.9%	1.1%	100.0%

Chi-Square = 76.386; df = 5; p = 0.000.

The last question posed to the women asked them to rate the services in the community after discharge from hospital. In the midwifery group of women, 66.7% rated the services excellent, 14.0% good, 3.5% fair and 0.0% poor. In the physician group of women, 35.8% of women rated services excellent, 44.9% good, 5.6 % fair and 1.6% poor. These results were found to be statistically different.

Table 12
Mother's Rating Of Community Health Services Post Discharge

	Excellent	Good	Fair	Poor	Didn't use any postnatal services	Total
Midwife	38	8	2	0	9	57
	66.7%	14.0%	3.5%	0%	15.8%	100.0%
Physician	298	374	47	13	94	826
	35.8%	44.9%	5.6%	1.6%	11.3%	100.0%
Total	336	382	49	13	103	883
	37.8%	42.9%	5.5%	1.5%	11.6%	100.0%

Chi-Square = 28.071; df = 5; p = 0.000.

In summary, the findings show two groups that share a similar demographic profile. The maternal health outcomes show increased initiation and continuance of breastfeeding four weeks post-discharge. The infant health outcomes do not differ between midwifery and physician providers. The service utilization outcomes differ in relation to decreased maternal family physician visits, length of stay, utilization of HBHC services and visits to family physicians. Finally, their evaluation of services during labour and delivery, in hospital, and in the community during the post-partum period is consistently better for the group receiving midwifery services.

CHAPTER IV – DISCUSSION

A. SOCIO-DEMOGRAPHICS AND CHRONIC ILLNESS

The socio-demographic and chronic illness literature review section of this study resulted in several hypothesis, which were explored with the data. The first hypothesis addressed differences between the groups with respect to age and expected that the midwifery group to be significantly older than the group of women in the physician group reflecting previous birthing experiences. The data indicated that any age difference that did exist between the two groups was not significant. The hypothesis was not upheld by the data and thus not a discriminating factor between the two groups.

The next hypothesis explored the ethnicity difference between the two groups in the study. This hypothesis stated that the women being cared for by midwives would consist of a greater portion of non-Canadians than the physician group in keeping with traditions in other parts of the world. When this issue was considered in the data, it was found that any difference based on ethnicity between the two groups was not statistically significant. This hypothesis was not upheld and was not a discerning factor between the two groups.

The third hypothesis attended to any difference between the two groups that exist as a result of parity. This hypothesis proposed that higher incidences of women experiencing their "first live birth" would be found in the physician group. When the data was studied, it revealed that any differences based on whether a woman was

experiencing her first live birth were not found to be statistically significant. This hypothesis was not upheld and was not a discerning factor between the two groups.

The next hypothesis focused on the marital status differences that existed between the two groups. This hypothesis expected that a greater proportion of women in the midwifery group would be in partnered relationships compared to the proportion in the physician group reflecting planned pregnancies and planned care in the prenatal period. When the data was analyzed, the findings indicated that any differences based on marital status were not statistically significant. This hypothesis was not upheld and was not a discerning factor between the two groups.

The fifth hypothesis focused on the differences between the two groups that exist as a result of income. This hypothesis anticipated that women in the midwifery group would belong to a higher income level reflecting the ability of this group to pay for alternative services. When the data was assessed, it indicated that the deviation that existed between the two groups of women based on income was not found to be statistically significant. This hypothesis was not upheld and was not a discerning factor between the two groups.

The next hypothesis looked at any variation that existed between the two groups of women as a result of education. This hypothesis predicted that women in the midwifery group would have higher educational levels reflecting a common idea that midwifery is a "luxury of the elite". Upon exploration of the data it was found that any difference between the two groups of women based on education was not statistically

significant. This hypothesis was not upheld and was not a discerning factor between the two groups.

The last hypothesis considered within this section investigated the difference that existed between the two groups due to chronic medical problems that the women had prior to their pregnancies. This hypothesis proposed that women with chronic health problems would choose or be directed to physician services for maternal and infant care more often than midwives. The data indicated that any differences between these two groups of women were not a function of the pre-existing chronic health problems of the mother. This hypothesis was not upheld and was not a discerning factor between the two groups.

In summary, none of the socioeconomic or chronic health factors that were anticipated to distinguish one service group from the other were upheld by the data. Therefore, coming into their pregnancy care, no structural differences could be found to account for any outcomes that may distinguish one service group from another.

B. HEALTH OUTCOMES

The health outcome literature review section of this study resulted in one main hypothesis, which was explored with the data. This hypothesis anticipated that no statistically significant differences in health outcomes would be found between the midwifery and physician groups of women or infants.

1. Mother

The gestational period of the pregnancy was the first maternal health outcome that was considered. The data indicated that there were no statistically significant differences between the two groups of women with respect to the gestational period of their pregnancy. Thus, gestation is not a discerning factor between the two groups.

The next variable considered was maternal medical problems postpartum. The data indicated that there were no statistically significant differences between the two groups of women based on maternal medical problems postpartum. This means that women have similar physical health outcomes whether cared for by a midwife or a physician.

The third variable considered was the EPDS scores. EPDS scores are measurement to assist in the identification of depression. The data indicated that there were no statistically significant differences between the two groups of women with respect to these depression scores. This indicates that the percentage of women likely to develop post-partum depression is similar whether a midwife or a physician provides care.

The fourth variable considered was hospital readmission rates. The data revealed that there were no statistically significant differences between the two groups of women. This suggests that even though women cared for by midwives stay in hospital for less time (Table 6), they were not more likely to be readmitted to hospital after discharge than women cared for by a physician.

The next variable was maternal emergency room visits. The data disclosed that there was no statistically significant difference between the two groups of women in relation to emergency room visits during the four-week post discharge period. This means that women who are cared for by midwives are not presenting for emergency room attention.

The sixth variable explored was "any form of breastfeeding initiated". The data revealed that there is a statistically significant difference in the rate of breastfeeding initiation between the women care for by midwives and physicians. Women cared for by midwives are more likely to initiate breastfeeding and provide their newborns with the benefits of breast milk, which includes immunological and developmental benefits (Dermer, Montgomery, 1997).

The last variable investigated was breastfeeding continuation to four weeks after discharge from hospital. The data showed that there was a statistically significant difference between the two groups of women on this issue. It indicates that women who are care for by midwives have a greater likelihood of breastfeeding for at least four weeks. A longer duration of breastfeeding appears to increase the benefits of breastfeeding for infants (The Royal Australian College of Physicians, 2001).

In summary, only the differences in breastfeeding health outcomes proved statistically significant. All of the other measures of maternal health outcome that were expected to differentiate the midwifery group from the physician group on the basis of health outcomes were not upheld by the data and therefore do not differ with respect to maternal caregiver.

2. Infant

The first variable used to investigate the health outcomes of infants was the maternal assessment of baby's health. The data revealed that there was no statistically significant difference between the two groups of women in their assessments of their babies' health.

Baby's weight was the second infant variable considered. The data indicated that there were no statistically significant differences between the two groups of women with respect to infant weight. Since a baby's weight at birth is strongly associated with mortality risk during the first year and, to a lesser degree, developmental problems in childhood and the risk of various diseases in adulthood (Wilcox, 2001), this result indicates that the infants cared for by midwives have the same potential health outcomes as infants cared for by physicians.

The next variable considered was baby's hospital readmission. The data indicated that there were no statistically significant differences between the two groups of women based on baby's hospital readmission. Once again, this suggests that in spite of lower rates of length of stay (Table 6), infants cared by midwives are no more likely to be readmitted to hospital after discharge than infants in the physician-care group.

The fifth variable considered was baby's emergency room visits. The data indicated that there were no statistically significant differences between the two groups of women with respect to these depression scores. This means that infants who are cared for by midwives were not presented for emergency room attention more frequently than other infants.

It is important to restate that this study was composed of healthy women who vaginally delivered a single infant. Multiple birth infants and infants who required admission to a neonatal intensive care or special care nursery for more than 24 hours were excluded from the sample. Hence, this study consisted of healthy babies. However, it is worth noting that babies that are born healthy can develop high-risk medical issues that require medical attention. The babies in this sample did not do this regardless of the caregiver they had.

In summary, none of the health outcome measures for infants that were anticipated to distinguish one service group from the other were upheld by the data. Therefore, infant health outcomes do not differ with respect to the health care provider utilized by women.

C. SERVICE UTILIZATION

The service utilization literature review section of this study resulted in two hypothesis, which was explored with the data. This first hypothesis stated that midwifery services are an add-on service that is more expensive than physician care. The second hypothesis maintained that midwifery services are a duplication of already existing maternity services. Several service utilization measures were used to explore these presumptions.

The differences in service utilization of visiting nurses, telephone nurse, other care provider, postpartum support group, family resources centre or program, Canadian Prenatal Nutrition Program, breastfeeding services or clinic, infant development program

and others were considered. Each measure was explored to determine if the differences between the midwifery group and the physician group were statistically significant. The data for each of these measures indicated that there were no statistically significant differences in the service utilization of these services between the two groups of women. This implies that with respect to these services, women and infants are equally likely to use these services regardless of whether they are cared for by midwives or physicians.

The next variables considered were maternal and infant family physician visit. The data indicated that there was a statistically significant difference between the two groups of women with respect to maternal and infant family physician visit. The data reported that only 14% of the women in the midwifery group visited their family physician, compared to 25.7% of the women in the physician care group. In addition, the data reported that only 40.4% of the infants in the midwifery group visited their family physician, compared to 76.7% of the physician group. Since we have established that women and infants in both groups are essentially the same and have basically equal health outcomes regardless of caregiver, it is reasonable to believe that midwives are servicing those women and infants who otherwise would have accessed a family physician for their care. Midwifery services include pregnancy care, labour and delivery care and 6-week postpartum care for both mother and infant and result in one cost to the health care system. Each additional visit to a family physician for either mother or infant is an additional cost to the health care system that would have been included in the provision of services by a midwife.

Length of stay in hospital was another measure considered. The data revealed that there were statistically significant differences between the two groups of women. 36.9% of women with midwifery care stayed in hospital 24 hours or less compared to 20.1% of women cared for by physicians. This translates into lower utilization rates for women with midwifery care and results in lower costs to the health care system.

The next measure investigated was the utilization of the Healthy Babies Healthy Children program. The women in the midwifery group reported that 69.6% of them received a phone call while 91.4% of the women in the physician group reported receiving this call. The difference in these values was found to be statistically significant Midwives are viewed as a reasonable substitute service for those offered by Healthy Babies, Healthy Children. Therefore, cost reductions are achieved by not providing telephone contacts initiated by the programme. Midwives inform their clients about services in the community, including HBHC and also initiate referrals to community-based programmes.

Of those women who received a phone call, 93.6% were offered a home visit. This result was not statistically significant different from women in the physician care group. The women in the midwifery group reported accepting this offer 32.4% of the time, while the physician group reported accepting this service 60.0% of the time. This difference was found to be statistically significant. Women in the midwifery group, who were likely to be receiving equivalent services from their midwife, utilized this service approximately 50% less than women in the physician care group again resulting in less costs to the health care system.

It was thought that service utilization might vary by research site reflecting differences in community service availability. As mentioned before, there existed no identifiable structural factors that could distinguish the two groups of mothers. It would be reasonable to expect that the utilization distribution would be even across the five sites if service availability was comparable in the five communities. The data indicated that there were statistically significant differences between the two groups of women with respect to site. The distribution of physician services were uniform across the five sites, but the distribution of midwifery services varied with site three accounting for 35.9% of the midwifery births while site one only accounted for 6.4% of the births. Even though the sample was evenly collected between sites, this does not necessarily mean that there existed equal access to midwifery services at each site. In many areas of Ontario, the demand for midwifery services exceeds the supply that can be offered to women. There still are areas of Ontario that do not have midwifery services established (e.g., Windsor). In addition, insufficient midwifery information and difficulties gaining hospital privileges impede the expansion of midwifery services uniformly throughout the province. The difference in sites found in this study may be a combination of these factors at play.

In summary, several utilization measures were not found to have a statistically significant difference between the two groups. However, family physician visits, length of stay, and utilization of the Healthy babies, Healthy Children resulted in lower service utilization by mothers in the midwifery group at a level that was statistically significant. Therefore, midwifery services are not an add-on service, but in fact a viable alternative to physician care that meet a range of client needs and result in decreased total service

utilization in other areas of the health care system. In addition, a number of the services that midwives "duplicate" are services that result in additional charge to the health care system rather than being included in the one fee structure for midwives.

D. PATIENT SATISFACTION

The patient satisfaction literature review section of this study resulted in one main hypothesis, which was explored with the data. The hypothesis argued that women would experience greater satisfaction with midwifery services compared to physician-based services. This hypothesis was investigated using four maternal rating measures at 4 weeks post discharge. The first measure considered the mother's rating of prenatal health services. The data reported that 71.9% of women in the midwifery group reported their prenatal care to be excellent while only 45% of the women in the physician care group reported that response. The data indicated that there was a statistically significant difference between the two groups of women with respect to this measure. This indicates that women who are cared for by midwives have a greater likelihood of viewing their prenatal health services as excellent compared to women receiving physician care.

Mother's rating of the labour and delivery services was another measure considered. The data revealed that there were statistically significant differences between the two groups of women with respect to this measure. 82.5% of the midwifery group of women reported excellent, while only 63.5% of the women in the physician group reported excellent with respect to their labour and delivery services. This suggests that

women accessing midwifery services have a greater likelihood of being satisfied with the labour and delivery care.

The third measure investigated was the mother's rating of the in hospital post delivery services. The data revealed that there were statistically significant differences between the two groups of women regarding in hospital post-delivery services. 50.9% of the women in the midwifery group rated this service as excellent, while 37.2% of the women in the physician group rated this service as excellent. This suggests that women accessing midwifery services have a greater probability of being happy with their in hospital post-delivery care.

The last measure considered was the mother's ratings of community health services after discharge. The data indicated that there were statistically significant differences between the two groups. 66.7% of the women in the midwifery group reported these services to be excellent, while only 35% of the women in the physician group provided that assessment. This means that women receiving midwifery services are more likely to be pleased with their community health services after discharge than are women receiving physician care.

In summary, on each measure of patient satisfaction measurement women receiving midwifery services were much more satisfied with their care than were women receiving physician-based services thus upholding the research hypothesis. Therefore, after experiencing prenatal, labour and delivery, in hospital post-delivery services and community health services after discharge, women who access midwifery care are more satisfied with their entire maternal health care experience.

This result is a reflection of the complementary nature of the relationship between midwives and childbearing women. Midwives view childbirth as a normal, safe process in the average situation and their approach is a less distressing and alienating experience for the mother. This is in contrast to the routine, alienating and brisk manner, often experienced with physician-oriented care. In addition, throughout the literature it has been identified that to promote satisfaction in women's maternity experience health care providers need to provide a holistic approach to maternity care which includes fulfilling women's expectations about childbirth, women developing a trusting relationship with their caregiver, allowing women to maintain control of their childbirth experience, less intervention and being supported through the stress of labour using a high degree of interpersonal skills.

E. LIMITATIONS OF THIS STUDY

As mentioned earlier there are several limits to this study. First, this study considered only in-hospital, singleton vaginally births, which one would normally think of as non-obstetrical births. About 15% of these births do develop into difficulty and 18-20% of births require emergency caesarean sections, and they are not accounted for in this study (Johanson, Newburn, Macfarlane, 2002). In spite of these limitations these findings apply to the majority of the births that occur in Ontario and provide a strong foundation to ask further questions regarding midwifery services and their application in the Ontario health care context.

In addition, this study does not consider the population of women who are cared for by midwives in the community. Currently in Ontario, 30-35% of midwife-assisted deliveries take place in the home, representing the lowest cost option for healthy deliveries (Association of Ontario Midwives, 2002). Including these values into a sample provides a comprehensive analysis since it includes all of the maternity care options available to women in Ontario at this time. It also provides a more accurate depiction of the service utilization saving that the entire health care system experiences with the inclusion of midwifery services as an option for maternal and infant care. 30-35% of midwifery births are a significant portion of the births that are preformed by midwives and need to be considered if the literature will truly reflect the impact that midwifery services have on the entire maternal and infant care options.

Furthermore, research needs to consider the implications of a maternal and infant care policy that uses both midwifery and physician care. This results in a number of questions. These include: when you are receiving care from a midwife and need to be transferred to an obstetrician, what are the implications of this; can you transfer from a midwife if you were assigned to an obstetrician; should all women be evaluated and only potentially high risk pregnancies be assigned to obstetricians.

Further exploration into the increased utility of midwives can provide information that may offer solutions to the increasing shortage of maternal and infant caregivers that is presenting Ontario at this time. Research determining the role that midwives may play in the maternity care of women in higher risk situations may be an option. The combined care of obstetricians and midwives for women with increased need of care may provide

the opportunity for women to benefit from the strengths of both caregivers' service, while relieving the stress currently being experienced by the shortage of maternal and infant caregivers.

Lastly the new policy set out by the Society of Obstetricians and Gynaecologists of Canada supporting the public funding of midwifery care in Canada sets a new context in which midwifery and physician care will operate in the future. This policy was operational when this study was done. Future research in this area needs to consider how this policy change, made in March 2003, will affect practice in this area of health care. Research needs to follow this in order to provide assessment and evaluation of the impact of this change on women, the access to services, the cost of health care, health outcomes and patient satisfaction.

CHAPTER V – CONCLUSION

Women have been having children since the beginning of time. Throughout this time many women have successfully given birth to their children and others have not been so fortunate. This is still true today. Fortunately, today we have skilled professionals to care for women who are going to give birth. Many pregnant women do not require a specialist to successfully manage through their experience, but for those that do, society has specialized physicians to try and remedy situations that may result in unsuccessful outcomes.

Midwives have been involved in the childbirth process for centuries. Over the last hundred and fifty years the medical profession has assumed the responsibility that midwives held. The medical approach to care was routine and technology-based, and resulted in an alienating and brisk culture of care. In the early 1970s, midwives re-organized and in 1994 midwifery was mandated as a regulated health service in Ontario. Today, the current model of maternal and infant care is not adequate to address society's needs and the Society of Obstetricians and Gynaecologists are supporting the continued establishment of midwifery in Canada as a regulated, publicly funded profession with hospital privileges.

This creates an interesting dilemma since, although the two professions have a number of similarities, they have significant differences. The medical perspective sees the process of childbirth as inherently pathological and dangerous to the mother and infant. Therefore, the decisions about care should rest in the hands of the doctor. On the

other hand, the midwifery approach views childbirth as a normal physiological process and encourages women to participate in the decisions surrounding their health care. This situation becomes even more complex when you start to consider what women want from their maternal and infant care.

This study set out to determine if there were any differences in health outcomes, service utilization and patient satisfaction for in-hospital, singleton vaginally delivered birth between physician cared and midwifery-care women. First, it considered if there were any socio-demographic or chronic illness differences that distinguished one service group from another. No structural differences were found to distinguish one service group from another. Secondly, the study explored whether health outcomes between physician and midwifery care were different. All of the health outcomes for mothers and infants, except for breast-feeding, were not found to differentiate the midwifery group from the physician group on the basis of health outcomes. Thirdly, service utilization measures were tested to see if midwifery care was a more expensive alternative of childbirth. The data revealed that most measures were not found to distinguish between physician and midwifery care for women. However, family physician visits, length of stay and the utilization of HBHC resulted in lower service utilization by mothers in the midwifery group that were statistically significant. Lastly, the study tested whether women were more satisfied with midwifery-based care versus physician-based care. The results indicated that women with midwifery-managed care were significantly more satisfied with their entire maternal health care experience compared to the physician-managed women.

These results lead us to several major conclusions. First, midwifery care is a viable option for maternity care in Ontario for low risk birth moms. None of the results from the study call into question the safety and practical nature of midwifery care. Therefore, it makes sense that health policy incorporates midwifery care more extensively in its maternal and infant care initiatives.

Secondly, through utilizing a midwife you are reducing the total number of services that are being used in the health care system, therefore reducing the cost to the health care system. In today's climate of cost-reduction, and service optimization, midwifery services appear to meet these criteria. The results point to decrease utilization of maternal and infant family physician visits, decreased length of hospital stay, and decreased use of the HBHC program without negative health outcomes. This decrease in utilization reduces the cost to the health care system, with a service that reports greater patient satisfaction than physician-managed care.

Thirdly, in addition to these findings, women are more satisfied with their care when they have midwives participating in all parts of their care. These findings are congruent with other studies on patient satisfaction with maternity care.

Fourth, health policy in Ontario should focus its efforts to expand midwifery services to make it a viable option for maternal and infant care to all healthy women in Ontario. Given the favourable outcomes that have been reported in this study, it seems reasonable to create health policies that sustain the continued expansion of midwifery services throughout Ontario. This needs to be done in a way that supports the overall maternal and infant care infrastructure, which includes obstetricians, nurses,

anaesthesiologists, family doctors, etc. so that women's health care is improved and not compromised.

Lastly, health care policy should support publicly funded midwifery in each of the jurisdictions in Canada, as a cost-effective approach to care with comparable outcomes. Currently, only Ontario, Quebec, British Columbia and Manitoba publicly fund midwifery services as a health service within their medical care programs. This means that women in other jurisdictions only have access to midwifery care if they can afford to pay for it out of their own pockets. Hopefully, with the new policy position of the Society of Obstetrician and Gynaecologists, other provinces will come to understand the necessity of publicly funding midwifery services and will allow the women of their provinces the right to maternal and infant care that provides cost-effective health outcomes and provides a model of care that yields positive patient satisfaction results.

BIBLIOGRAPHY

Albers, L.L., Sedler, K.D., Greulich, B. (1999). Midwifery Care: The "Gold Standard" for Normal Childbirth?. *Birth, 26*(1), 53-54.

Annadale, E.C. (1988). How Midwives Accomplish Natural Birth: Managing Risk and Balancing Expectations. *Social Problems, 35*(2), 95-110.

Association of Ontario Midwives (2002). Consuming Fewer Resources. *IN Cost-Effective Care.* Retrieved August 21, 2003, from http://www.aom.on.ca/facts/CostOfCare.html)

Bourgeault, I.L., (2000) Delivering the 'new' Canadian midwifery: the impact on midwifery integration into the Ontario health care system. *Sociology of Health and Illness,* 22, 2, 172-196.

Bourgeault. I.L., Fynes, M.T., (1996/97) Delivering Midwifery in Ontario: How and Why Midwifery Was Integrated into the Provincial Health Care System *Health and Canadian Society,* 4, 2, 227-260.

Bourgeault. I.L., Fynes, M.T., (1997) Integrating lay and nurse-midwives into the U.S. and Canadian Health Care Systems, *Social Science and Medicine,* 44, 7, 1051-63.

Burtch. B., (1994) Trials of Labour: The Re-emergence of Midwifery. Montreal: McGill – Queen's University Press.

Canadian Women's Health Network. (2001). Requirement of gender-based analysis (GBA) to service delivery and planning. In Canadian Women's Health Network's Submission To The Commission on the Future of Health Care in Canada. Retrieved August 22, 2003 from http://www.cwhn.ca/resources/romanow/chapter5.html

Chalmers, B., Manglaterra, V., Porter, R.,. (2001). WHO Principles of Perinatal Care: The Essential Antenatal, Perinata and Postpartum Care Course. *Birth, 28*(3), 202-207.

Chalmers, B., Porter, R. (2001). Assessing Effective Care in Normal Labor: The Bologna Score. *Birth, 28*(2), 79-83.

Dermer, A., Montgomery, A. (1997). Breastfeeding: Good For Babies, Mothers, And The Planet. Retrieved August 21, 2003 from http://medicalreporter.health.org/tmr0297.html

Eberts. M., Schwartz. A., Edney. R., Kaufman. K., (eds.) (1987) *Reports of the Task Force on the Implementation of Midwifery in Ontario.* Toronto: Queens Park Printer, 195-232

Fowles, E. (1998). Labor Concerns of Women Two Months After Delivery. *Birth, 25*(4), 235-239.

Fox, B., Worts, D. (1999). Revisiting The Critique of Medicalized Childbirth: A Contribution to the Sociology of Birth. *Gender and Society, 13*(3), 326-346.

Fraser, D.M. (1999). Women's Perceptions of Midwifery Care: A Longitudinal Study to Shape Curriculum Development. *Birth, 26*(2), 99-107.

Gibbens, J., Thomson, A.M. (2001). Women's expectations and experiences of childbirth. *Midwifery, 17,* 302-313.

Hannah, M.E. (1999). Commentary: Managing Labor: What Do Women Really Want?. *Birth*, 26(2), 97-98.

Harvey, S., Jarrell, J., Brant, R., Stainton, C., Rach, D., (1996) Birth: A Randomized, Controlled Trial of Nurse-Midwifery Care. *Birth,* 23(3) 115-123.

Harvey,S, Rach, D, Stainton, MC, Jarrell, J, Brant, R.(2002) Evaluation of Satisfaction of midwifery care. *Midwifery.* 18: 260-267.

Homer, C.S.E., Davis, G.K., Cooke, M., Barclay, L.M. (2002). Women's experiences of continuity of midwifery care in a randomized controlled trial in Australia. *Midwifery, 18,* 102-112.

Johanson, R., Newburn, M., Macfarlane, A. (2002). Has medicalisation of childbirth gone too far? *British Medical Journal, 324,* 892-5.

Kaufman, K. (2000). Commentary: Have We Yet Learned About the Effects of Continuity of Midwifery Care?. *Birth, 27*(3), 174-176.

Kitzinger. S., (1991). *The Midwife Challenge* Pandora, London

Kralj, B., (1998). Examining trends in medical service utilization. *Ontario Medical Review,* March, 17-21.

LoCicero, A.K. (1993). Explaining Excessive Rates of Caesareans and Other Childbirth Interventions: Contributions from Contemporary Theories of Gender and Psychosocial Development. *Social Science and Medicine, 37*(10), 1261-1269.

Mason, J., (1987). The history of midwifery in Canada, in M. Eberts, A. Schwartz, R. Edney, K. Kaufman. (eds.) *Reports of the Task Force on the Implementation of Midwifery in Ontario.* Toronto: Queens Park Printer, 195-232

Mason, J., (1988) Midwifery in Canada. In *The Midwife Challenge,* ed S. Kitzinger. Pandora, London, 99-133

Midwifery Services of Durham. (1994). *Philosophy of Midwifery Care in Ontario.* Retrieve October 14, 2002, from (http://www3.sympatico.ca/durham.midwives/practice/about.html).

Sadler, L.C., Davison,T., McCowan, L.M.E. (2001). Maternal Satisfaction with Active Management of Labor: A Randomized Controlled Trial. *Birth, 28*(4), 225-235.

Society of Obstetricians and Gynaecologists (2000) Executive Summary. *In Future of Maternity Care in* Canada Retrieved July, 11, 2003 from http://www.sogc.org/conferences/pdfs/summary-final.PDF

Society of Obstetricians and Gynaecologists (2003) Midwifery. *Journal of Obstetricians and Gynaecologists Canada,* 25, 3:239.

Sword, W., Watt, S., Krueger, P., Lee, K.S., Sheehan, D., Roberts, J., & Gafni, A. (2001). Understanding newborn infant readmission: Findings of The Ontario Mother and Infant Survey. *Canadian Journal of Public Health, 92*(3), 196-200.

Sword, W., Watt, S., Kruger, P.,. (2000). The Ontario Mother and Infant Study II, unpublished manuscript research proposal submitted to CIHR. Unpublished manuscript.

Sword, W., Watt, S., Kruger, P.,. (2003). The Ontario Mother and Infant Study III Proposal, Submitted to CIHR. Unpublished manuscript.

The Royal Australian College of Physician (2001) Where we stand. In *Health Policy - Breastfeeding.* Retrieved August 21, 203 from http://www.racp.edu.au/hpu/paed/breastfeed.htm

Thompson, J.E., (2002) Midwives and human rights: dream or reality. *Midwifery.* 18, 188-192.

Tumblin, A., Simkin, P. (2001). Pregnant Women's Perceptions of Their Nurse's Role During Labor and Delivery. *Birth, 28*(1), 52-56.

Turnbull, D., Holmes, A., Shields, N., Cheyne, H.,(1996) Randomised, controlled trial of efficacy of midwife-managed care. *The Lancet,* 348(9022) 213-218

Van Wagner, V., (1982) Women organizing for midwifery in Ontario. *Resources for Feminist Research* 17, 115-118.

Watt, S., Browne, G., Gafni, A., Roberts, J., & Byrne, C. (1999). Community care for people with chronic conditions: An analysis of nine studies of health and social service utilization in Ontario. *The Millbank Quarterly, 77*(3), 363-392.

Weitz, R., Sullivan, D.A. (1986). The Politics of Childbirth. *Social Problems, 33*(3), 163-175.

Wilcox, A.J. (2001). On the importance – or unimportance – of birth weight. *International Journal of Epidemiology,* 30 (6): 1233-41. Retrieved August 21, 2003 From http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11821313&dopt=Abstract

Zadoroznyj, M. (2000). Midwife-led maternity services and consumer 'choice' in an Australian metropolitan region. *Midwifery, 16,* 177-185.

APPENDIX A

SOCIO-DEMOGRAPHIC CHARACTERISTICS & CHRONIC HEALTH ISSUES

Table A-1
Age

	Up to 20 years	20- 29 yrs	30 –39 yrs	40 yr and above	Total
Midwife	2	38	35	3	78
	2.6%	48.7%	44.9%	3.8%	100.0%
Physician	74	507	559	30	1170
	6.3%	43.3%	47.8%	2.6%	100.0%
Total	76	545	594	33	1248
	6.1%	43.7%	47.6%	2.6%	100.0%

Chi-Square = 2.768; df = 3; p = 0.429.

Table A-2
Ethnicity

	Canadians	Other	Total
Midwife	55	23	78
	70.5%	29.5%	100.0%
Physician	764	391	1155
	66.1%	33.9%	100.0%
Total	819	414	1233
	66.4%	33.6%	100.0%

Chi-Square = 0.624; df = 1; p = 0.429.

Table A-3
First Live Birth

	Yes	No	Total
Midwife	34	43	77
	44.2%	55.8%	100.0%
Physician	503	665	1168
	43.1%	56.9%	100.0%
Total	537	708	1245
	43.1%	56.9%	100.0%

Chi-Square = 0.35; df = 1and p = 0.852

Table A-4
Marital Status

	Partnered	Non -partnered	Total
Midwife	73	4	77
	94.8%	5.2%	100.0%
Physician	1066	95	1161
	91.8%	8.2%	100.0%
Total	1139	99	1238
	92.0%	8.0%	100.0%

Chi-Square = 0.876; df = 1; p = 0.349.

Table A-5
Family Income

	Up to $19,999	20,000 to $59,999	More than $60,000	Total
Midwife	9	32	32	73
	12.3%	43.8%	43.8%	100.0%
Physician	188	417	467	1072
	17.5%	38.9%	43.6%	100.0%
Total	197	449	499	1145
	17.2%	39.2%	43.6%	100.0%

Chi-Square = 1.504; df = 2; p = 0.472

Table A-6
Education

	Up to high school	Some community college/ University	Degree: community college, bachelor or graduate	Total
Midwife	15	17	45	77
	19.5%	22.1%	58.4%	100.0%
Physician	292	206	660	1158
	25.2%	17.8%	57.0%	100.0%
Total	307	223	705	1235
	24.9%	18.1%	57.1%	100.0%

Chi-Square = 1.717; df = 2; p = 0.424.

Table A-7
Chronic Health Problems Of Mother

	Yes	No	Total
Midwife	71	7	78
	91.0%	9.0%	100.0%
Physician	1083	86	1169
	92.6%	7.4%	100.0%
Total	1154	93	1247
	92.5%	7.5%	100.0%

Chi-Square = 0.277; df = 1; p = 0.599.

HEALTH OUTCOMES

Table A-8
Gestational Period Of Pregnancy

	Full term	Premature	Total
Midwife	71	6	78
	91.0%	7.7%	100.0%
Physician	1042	102	1172
	88.9%	8.7%	100.0%
Total	1113	108	1250
	89.0%	8.6%	100.0%

Chi-Square = 0.510; df = 2; p = 0.775.

Table A-9
Mother's Medical Problems Postpartum

	No	Yes	Total
Midwife	75	3	78
	96.2%	3.8%	100.0%
Physician	1096	74	1170
	93.7%	6.3%	100.0%
Total	1171	77	1248
	93.8%	6.2%	100.0%

Chi-Square = 0.776; df = 1; p = 0.378.

Table A-10
EPDS Scores

	≥12	<12	Total
Midwife	4	52	56
	7.1%	92.9%	100.0%
Physician	80	742	822
	9.7%	90.3%	100.0%
Total	84	794	878
	9.6%	90.4%	100.0%

Chi-Square = 0.406; df = 1; p = 0.524

Table A-11
Maternal Hospital Readmission

	Yes	No	Total
Midwife	0	57	57
	0%	100.0%	100.0%
Physician	16	815	831
	1.9%	98.1%	100.0%
Total	16	872	888
	1.8%	98.2%	100.0%

Chi-Square =1.118; df = 1; p = 0.290

Table A-12
Maternal Emergency Room Visit

	Missing	Yes	No	Total
Midwife	0	6	51	57
	.0%	10.5%	89.5%	100.0%
Physician	3	60	770	830
	.4%	7.2%	92.4%	100.0%
Total	3	66	821	887
	.3%	7.4%	92.2%	100.0%

Chi-Square = 1.051; df = 2; p = 0.591.

Table A-13
Baby's Health

	Excellent	Very good	Good	Fair	Poor	Total
Midwife	36	12	6	2	1	57
	63.2%	21.1%	10.5%	3.5%	1.8%	100.0%
Physician	506	195	108	13	2	824
	60.7%	23.4%	13.0%	1.6%	.2%	100.0%
Total	542	207	114	15	3	881
	60.9%	23.3%	12.8%	1.7%	.3%	100.0%

Chi-Square = 5.873; df = 5; p = 0.319.

Table A-14
Baby's Health Problems

	No	Yes	Total
Midwife	71	7	78
	91.0%	9.0%	100.0%
Physician	1022	148	1170
	87.4%	12.6%	100.0%
Total	1093	155	1248
	87.6%	12.4%	100.0%

Chi-Square = 0.908; df = 1; p = 0.341.

Table A-15
Baby's Weight (In Grams)

	Mean	N	Std. Deviation
Midwife	3505.2	78	499.2
Physician	3468.4	1166	555.3
Total	3470.7	1244	549.7

The Anova = 0.329; df = 1; p = 0.567

Table A-16
Baby's Hospital Readmission

	Yes	No	Total
Midwife	5	52	57
	8.8%	91.2%	100.0%
Physician	40	790	830
	4.8%	94.8%	100.0%
Total	45	842	887
	5.1%	94.6%	100.0%

Chi-Square = 1.942; df = 2; p = 0.379

Table A-17
Baby's Emergency Room Visit

	Yes	No	Total
Midwife	1	56	57
	1.8%	98.2%	100.0%
Physician	29	804	833
	3.5%	96.5%	100.0%
Total	30	860	890
	3.4%	96.6%	100.0%

Chi-Square = 0.489; df = 1; p = 0.485.

SERVICE UTILIZATION

Table A-18
Healthy Babies/Healthy Children Program Telephone Contact

	Yes	No	Don't know	Total
Midwife	27	0	12	39
	69.2%	.0%	30.8%	100.0%
Physician	415	70	257	742
	55.5%	9.4%	34.4%	100.0%
Total	442	70	269	781
	56.2%	8.9%	34.2%	100.0%

Chi-Square = 5.350; df = 3; p = 0.148.

Table A-19
Home Visit Offer

	Yes	No	Total
Midwife	37	2	39
	94.9%	5.1%	100.0%
Physician	700	40	740
	93.6%	5.3%	100.0%
Total	737	42	779
	93.6%	5.3%	100.0%

Chi-Square = 0.427; df = 2; p = 0.808.

Table A-20
Other visiting nurse

	Yes	No	Total
Midwife	2	55	57
	3.5%	96.5%	100.0%
Physician	94	731	835
	11.3%	87.8%	100.0%
Total	96	786	882
	10.8%	88.3%	100.0%

Chi-Square = 3.999; df = 2; p = 0.135

Table A-21
Postpartum Support Group

	Yes	No	Total
Midwife	1	56	57
	1.8%	98.2%	100.0%
Physician	7	819	836
	.8%	98.3%	100.0%
Total	8	875	883
	.9%	98.3%	100.0%

Chi-Square = 0.975; df = 2; p = 0.614.

Table A-22
Family Resources Centre Or Program

	Missing	Yes	No	Total
Midwife	0	1	56	57
	.0%	1.8%	98.2%	100.0%
Physician	7	32	794	833
	.8%	3.8%	95.3%	100.0%
Total	7	33	850	890
	.8%	3.7%	95.5%	100.0%

Chi-Square = 1.154; df = 2; p = 0.562.

Table A-23
Canadian Prenatal Nutrition Program

	Missing	Yes	No	Total
Midwife	0	1	56	57
	.0%	1.8%	98.2%	100.0%
Physician	7	5	821	833
	.8%	.6%	98.6%	100.0%
Total	7	6	877	890
	.8%	.7%	98.5%	100.0%

Chi-Square = 1.534; df = 2; p = 0.464.

Table A-24
Breastfeeding Services Or Clinic

	Yes	No	Total
Midwife	8	49	57
	14.0%	86.0%	100.0%
Physician	143	683	826
	17.2%	82.0%	100.0%
Total	151	732	883
	17.0%	82.2%	100.0%

Chi-Square = 0.890; df = 2; p = 0.641.

Table A-25
Infant Development Program

	Yes	No	Total
Midwife	0	57	57
	.0%	100.0%	100.0%
Physician	9	817	826
	1.1%	98.1%	100.0%
Total	9	874	883
	1.0%	98.2%	100.0%

Chi-Square = 1.115; df = 2; p = 0.573

Table A-26
Others

	Yes	No	Total
Midwife	3	54	57
	5.3%	94.7%	100.0%
Physician	24	802	826
	2.9%	96.3%	100.0%
Total	27	856	883
	3.0%	96.2%	100.0%

Chi-Square = 1.490; df = 2; p = 0.475.