Implementing Midwifery in Newfoundland and Labrador

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Implementing Midwifery in Newfoundland and Labrador:

Report and Recommendations

Submitted to The Honourable Susan Sullivan
Minister of Health and Community Services

Government of Newfoundland and Labrador

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The Canadian Midwives Association provided relevant information about midwifery across the country and enabled us to obtain views of their members about practising midwifery in Newfoundland and Labrador. We thank the Executive Director and staff members for their helpful support.

Our sincere hope is that actions resulting from our report will make a positive contribution to the future of midwifery and therefore to all of primary maternity care in Newfoundland and Labrador.

Abbreviations and acronyms

AMNL	Association of Midwives of Newfoundland and Labrador
CAM	Canadian Association of Midwives
CIHI	Canadian Institute for Health Information
CMRC	Canadian Midwifery Regulators Consortium
DHCS	Department of Health and Community Services
FTE	Full time equivalent
HIROC	Health Insurance Reciprocal of Canada
HPA	Health Professions Act
ICM	International Confederation of Midwives
NLCHI	Newfoundland and Labrador Centre for Health Information
SOGC	Society of Obstetricians and Gynaecologists of Canada
VBAC	Vaginal Birth After Caesarean section
WHO	World Health Organization

Glossary

Amniotomy – procedure to rupture the membranes surrounding the unborn baby and release amniotic fluid; may be done to start or increase the strength of labour contractions

Episiotomy – incision made at the time of birth to enlarge the vaginal opening

Instrumental delivery – delivery of the infant with assistance of forceps or a vacuum cup applied to the baby's head

Interprofessional – group of persons from 2 or more professions who work together

Intrapartum – labour and birth

Labour Induction/labour augmentation – procedure to start labour contractions (induction) or strengthen the contractions (augmentation); often accomplished with the use of the hormone oxytocin

Lactation – breastfeeding

Multiparous – having a second or subsequent birth

Neonatal – the newborn period; defined as the first 28 days of life

Operative delivery – caesarean section birth (some published papers may include instrumental deliveries in their reporting of operative deliveries)

Perinatal – the period of labour and birth and the first 7 days of life

Pre-eclampsia – a complication of pregnancy, evidenced by changes in blood pressure, kidney function and other body systems, that affects growth and development of the unborn baby

Primary maternity care – care provided for essentially healthy women and their babies during the prenatal, labour and birth and postnatal periods.

Shoulder dystocia – the baby's shoulders do not readily pass through the birth canal necessitating rapid deliberate actions by the birth attendant to assist the delivery

Implementing Midwifery in Newfoundland and Labrador

Executive Summary

We strongly support the establishment of midwifery in Newfoundland and Labrador as part of primary maternity care services. Investing in the regulation, deployment and support of midwives will contribute to improved maternity care services and better health for mothers and infants. We base this assertion on our knowledge of midwifery in many parts of Canada and elsewhere and on the specific situation of Newfoundland and Labrador. This report summarizes that information and sets forth our recommendations for the implementation of midwifery.

Internationally, midwives are considered to be experts in normal birth. Because they focus entirely on the maternity cycle and they provide care on their own responsibility to healthy women and infants, they are valuable participants in around-the-clock attendance at normal births. Beyond conducting normal deliveries, their expertise is important in prenatal, postnatal and newborn care. They care for women and infants with normal findings and are continually watchful for possible or actual complications, making timely referrals for abnormal findings and managing emergencies when they arise. Midwives promote wellness through education and support, integrating social and cultural aspects of women's lives.

Although midwives were part of maternity care in earlier times in Newfoundland and Labrador, they no longer have a recognized role. Similar to changes elsewhere in Canada, health professions became formalized and hospital care for childbirth became the norm by the middle 1900's, but these changes did not include midwifery as a recognized profession. In recent decades the percentage of family physicians in Canada that provide full maternity care has steadily declined while specialist obstetricians increasingly care for the vast majority of pregnant women, even when all findings are normal.

A similar situation prevails in Newfoundland and Labrador especially with reference to care at the time of birth. While the total number of births has declined, as illustrated by the change from 4,863 births in 2008 to 4,367 in 2012, care must continue to be available around the clock every day of the year. To ensure continuous medical coverage, which most often means coverage by specialist obstetricians, maternity services have been consolidated to 10 hospitals in the province. As a consequence, more women must travel greater distances to access those services. Even with consolidation the number of births differs widely across sites from 80 per year in Labrador City to nearly 2,500 in St John's. In smaller hospitals when births are infrequent it is difficult for generalist nurses and physicians to maintain skills, confidence and knowledge about current obstetric issues because they must provide care for a wide range of patients.

Partly in response to the impact of consolidation of services and the declining participation of family doctors in maternity care across the country, midwifery has become established in most Canadian provinces and territories over the past 20 years. Midwives focus on the childbearing cycle; their mandate is providing competent care throughout pregnancy, birth and the postnatal period to women and their babies. They are providing care to women who have widely different living situations as well as varied social and cultural backgrounds. Their educational preparation and skills are well suited to rural and very remote locations as well as large urban communities.

Our review of maternity care in Newfoundland and Labrador revealed that the province has the highest rates of caesarean section in Canada (31% vs 27%, respectively). While the procedure can be lifesaving in critical situations, the rising rates are cause for concern since women are more likely to experience complications of surgery, both in the immediate postnatal period and in subsequent pregnancies. Infants are more likely to experience problems also, including difficulty with feeding. Efforts to reduce high rates are important for improved health of both mothers and babies. High caesarean rates lead to increased costs because of the need for added resources and longer stay in hospital for both mother and baby. Medical evidence supports the option of vaginal birth after a previous caesarean section, which is one way to reduce the overall caesarean section rate. Studies of midwifery care show higher rates of successful vaginal birth after a previous caesarean; in Ontario, midwifery rates of repeat caesarean are nearly half the provincial average (46% vs 84%).

We found also that Newfoundland and Labrador has the lowest rates of initiation of and continued breastfeeding. Statistics Canada reports 59% of women in the province initiate breastfeeding compared with 90% in Canada overall. The benefits to infants of sustained breastfeeding through the first six months of life include optimal growth, protection against infections, enhanced cognitive development and prevention of sudden infant death. Health Canada recommends exclusive breast feeding for six months, but only 17% of mothers in the province do so. Improved infant health can result from efforts to increase both the number of women who breastfeed and the duration of breastfeeding. When comparisons have been made between midwifery care and "usual" care, the percentage of women who initiate breastfeeding and continue for defined time periods consistently favour midwifery care. This likely reflects the time midwives invest in learning about breastfeeding, the time they spend with women teaching about breastfeeding and providing assistance to solve common breastfeeding problems.

The overview of maternity care in Newfoundland and Labrador provides indications that midwives can make a valuable contribution to health care in the province. Midwives have been incorporated in contemporary Canadian health care for nearly 20 years, beginning in Ontario in

1994. Prince Edward Island and Yukon Territory remain the two jurisdictions with no provision for regulated midwifery. New Brunswick has legislation in place but has halted the implementation process. In Newfoundland and Labrador the Health Professions Act (2010) provides the framework for regulating midwifery practice.

In all the provinces/territories that regulate midwifery, the services of midwives are part of government funded health care services. In the majority of those provinces/territories midwives are salaried employees of health authorities, or similar. Midwives almost always work in a group practice, usually with other midwives but also with nurse practitioners, family doctors or obstetricians. They hold admitting and discharge privileges with a hospital(s), and in some locations work in birth centres as well as attending births at home. They independently order necessary laboratory investigations and ultrasound examinations for pregnant women as well as prescribe medications necessary for pregnancy or newborn care and for minor complications.

Across the country there is fundamental consistency about midwifery regulation, practice and education. While there are some variations in scope of practice, e.g. postpartum care may extend beyond six weeks in some locations, there are national competencies endorsed by all jurisdictions. There is now a national registration examination and an agreement that facilitates the registration of midwives from one province/territory to another. Midwifery education is at the Bachelor's degree level with a strong emphasis on biological and social sciences as the foundation for clinical competence.

The experience of other jurisdictions in integrating midwives into existing systems and institutions shows that it takes time, effort and collaborative planning by all stakeholders. Policies, procedures, and usual communication networks must be altered to enable midwives to practice. Introducing midwives means change for other health professionals. The use of quality assurance reviews, assessments of best practice, and regular problem solving forums can assist all providers to work together at the local community/institution level.

The research literature about midwifery care from Canadian and international sources shows favorable results for both mothers and babies. No studies have found adverse consequences from midwifery care in circumstances where midwives are well integrated and supported to function in their full scope of responsibility. Women experience fewer interventions, babies have very low rates of serious illness. Canadian studies have shown that women are highly satisfied with midwifery, and requests for care exceed the available capacity of present practitioners.

Costing studies in Canada are not comprehensive, but the findings to date support the proposition that midwives achieve comparable outcomes to physician care for low risk women

at lower cost. One component of reduced cost is shorter hospital stay. Establishing midwifery is a long term investment, however, because it takes legislative and policy changes, time and effort to integrate practitioners and several years before there are sufficient midwives to have an impact on maternity care provision.

Implementing regulated midwifery in Newfoundland and Labrador will require several actions. It is important to expedite the process because with no regulation in place there is no mechanism to ensure adequate preparation, competence, and ongoing standards of care of persons who may present themselves as midwives. Under the Health Professions Act 2010, the College of Midwives is responsible for developing aspects of professional practice such as entry to practice requirements, renewal or recertification requirements, a scope of practice, standards of practice, and a code of ethics. However, to be a College member, the person must be registered. Therefore, some interim steps are needed since it is unlikely that individuals with a midwifery credential from outside Canada now living in Newfoundland and Labrador can qualify immediately for registration. These persons will require an assessment, and perhaps a period of study with mentored practice to meet Canadian competencies. Interprovincial agreements would permit midwives who are now registered and practicing in other provinces to be registered rapidly; this route to registration can be an early source of College members. The interprovincial mobility agreement will enable recruitment of midwives who wish to work in Newfoundland and Labrador. The results of a spring 2013 survey distributed to midwives in Canada indicated that nearly 100 registered midwives have at least some interest in working in Newfoundland and Labrador.

This Executive Summary provides in brief the foundation for the detailed recommendations that follow regarding implementing midwifery in Newfoundland and Labrador.

1. **We recommend announcement of a 5 to 7 year plan for development of midwifery** within the primary maternity care sector of Newfoundland and Labrador health services. The plan would include support for the costs of:

   - An Implementation Coordinator (see Recommendation 2 for details).
   - Funding midwifery positions and associated costs in up to four initial sites (see Recommendations 3-6 for details).
   - Funding the assessment process of in-province candidates for registration (see Recommendation 7 for details).
   - Funding the out-of-province members of the Transitional College of Midwives (see Recommendation 8 for details) .

   The 5 to 7 year plan would include a gradual increase in the number of funded midwifery positions and an increased number of practice sites, with a goal of reaching

20 full time equivalent (FTE) positions in 2018 or beyond. We estimate this number of FTE midwives would care for about 15% of births in the province, a level now being reached in communities in Ontario. An evaluation is recommended at the end of five years to assess the implementation plan and re-set targets as necessary. See Appendix D for a year by year description of the developmental plan.

2. **We recommend that the Department of Health and Community Services appoint an Implementation Coordinator** for a 2-3 year period to oversee and facilitate the myriad policy and practical issues that are part of implementing and facilitating midwifery practice. This person need not be a midwife but should be familiar with clinical issues and be knowledgeable about administrative aspects of health care policies. For example, it is vital that midwives obtain hospital admitting privileges, be able to order specific laboratory and imaging investigations, prescribe medications, carry out emergency actions and obtain specialist consultations as needed and that specialist fees accommodate such consults. While the regulatory body will be responsible for delineating (for example) the specific medications and investigations that are part of the scope of practice, the implementation coordinator would identify and help align structures and policies within government, health authorities and institutions that will enable midwives to function.

   We recommend that the Implementation Coordinator form an advisory committee composed of public and professional members who are familiar with maternity care in Newfoundland and Labrador such as nurses and physicians, health administrators, representatives of the Transitional College, childbirth advocates. The advisory committee would be advocates for midwifery, review policies, protocols and similar documents with a view to their operational impact, help prepare communities for the integration of midwives, and assist with interprofessional collaboration during the formative period of establishing midwifery services.

3. **We recommend that midwives be employed by Health Authorities in salaried positions.**
   We recommend a beginning salary (2013 dollars) of $76-77,000 and a maximum in the high $90 thousands, with benefits (approximately 20%) added. Newfoundland and Labrador will be competing with other provinces to attract midwives and it will be an advantage to recruit individuals who have several years of practice experience. We recommend that the increments in salary extend over an approximate 15 year period to promote retention of senior midwives.

   Employers will need to give careful consideration to employment policies and reporting relationships to ensure that policies are not in conflict with professional standards. For example, providing continuity of care to women can often mean irregular and long work hours, but it is important midwives manage those aspects of their work and not encounter employment restrictions. Midwives should be aligned within hospitals or clinics with other primary maternity care providers; such alignment strengthens policies and approaches to normal birth.

4. **We recommend** the Department of Health and Community Services collaborate with the Association of Midwives of Newfoundland and Labrador to **secure and administer liability insurance** for registered midwives similar to policies obtained in other provinces.

5. **We recommend** that the Newfoundland and Labrador Centre for Health Information **design and manage a midwifery information system** and that periodic reports be issued about the contribution and outcomes of midwifery care.

6. **We recommend the following potential sites for establishing the first midwifery services.** Final selection should be based on considerations of the balance of medical and midwifery resources that can best meet community needs, on community interest, and on a diversity of settings. We do not think the initial services should be labeled "pilot projects" since this implies impermanence.

    - Within Eastern Health: Fund positions for 2 full time equivalent (FTE) midwives to work collaboratively within a family practice group in St John's. The specifics of how the midwives would work within the practice are to be negotiated with those most directly involved. An integrated practice of family doctors and midwives such as exists in Vancouver[58] is a model for consideration.

    - Within Labrador-Grenfell Health: If the three nurses in St Anthony who presently provide many aspects of midwifery care qualify for midwifery registration, we recommend their transition to roles that incorporate a full scope of midwifery practice. (Their unique situation may require that they have dual registration as a midwife and as a nurse in order to also care for non-maternity patients, if that is essential to their full time employment.)

    - Within Labrador-Grenfell Health: Fund positions for 2 or 3 FTE midwives for Happy Valley-Goose Bay who have an interest in the care of Aboriginal women. They would work in collaboration with family physicians in visiting and consulting with primary care practitioners in the prenatal and postnatal clinics in communities outside the city, provide ongoing prenatal care and teaching when women are resident in Happy Valley-Goose Bay awaiting labour and birth, provide breast feeding support in the postnatal period, and be part of the on-call coverage for the birth unit. [*]

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[*] We are sympathetic to the views we heard about the potentially damaging effects of policies that separate women from their home for several weeks. Returning birth to local communities is, however, a complex and long term process. An approach of selective evacuation exists in coastal Hudson Bay Nunavik communities. This approach relies on community supports and local birth centres that integrate cultural traditions and culturally appropriate care. A long period of teaching and developing local Aboriginal midwifery skills, mobilizing community involvement and creating new policies was critical to the realization of returning birth to remote communities of Labrador.[12,47] We think it is inappropriate for us to recommend birth centres in remote communities, but we think Aboriginal communities should be supported to consider the policies, facilities and care providers that are best for their mothers and babies.

- Other site(s): Fund positions for one or two FTE midwives for a rural community/communities where an obstetrician-gynecologist and/or a family doctor(s) is leaving, or where additional personnel are needed for better on-call coverage. The midwives would work collaboratively with medical and nursing personnel to provide comprehensive prenatal, labour and birth and postnatal care.

7. **We recommend an assessment program be conducted once within the province** for current residents of Newfoundland and Labrador who have midwifery preparation, current or recent midwifery experience and meet eligibility criteria for such a program. We recommend that a midwife with practice and teaching experience registered in Canada be contracted under the auspices of the Council of Health Professions Registrar to design and conduct the assessment process and arrange individual mentoring to meet the Canadian Competencies for Midwives.

   We considered whether qualified applicants could be sponsored to attend either of the only two programs that exist in Canada for assessment of internationally educated midwives, the International Midwifery Pre-registration Program at Ryerson University in Ontario[59] or the Multijurisdictional Midwifery Bridging Program[60] offered largely through distance learning. The former option means leaving the province for up to a year and the latter option is closed temporarily, with a hoped-for resumption date of Fall 2014. We think a within-province program is preferable to either option.

8. **We recommend the Department of Health and Community Services provide funds to the Council of Health Professions and Registrar to expedite the formation of a Transitional College of Midwives.**

   We recommend that the Registrar and the Council of Health Professions of Newfoundland and Labrador register as non-practicing midwives a minimum of six midwives who are registered and practicing midwifery in another Canadian province/territory. These midwives will be voting members-at-distance of a Transitional College of Midwives and will receive a stipend for their participation. The Canadian Midwifery Regulators Consortium will recruit and select senior individuals who are willing to undertake this work for an interim period. The Transitional College, whose membership can include honorary members, such as representatives of the Association of Midwives of Newfoundland and Labrador, will carry out the mandated functions of the College (e.g. entry to practice requirements, scope of practice, standards of practice, renewal of registration requirements). The Transitional College will become the (permanent) College of Midwives when the members-at-distance can be replaced by registered midwives practicing within Newfoundland and Labrador.

9. We recommend that the Transitional College of Midwives take the following actions:

9.1 Recognize three categories of midwives eligible for registration.

A midwife registered in another province or territory who is in good standing with the regulatory body in that jurisdiction and who intends to have or has residence in Newfoundland and Labrador;

A graduate of a recognized program of midwifery education in Canada who has successfully passed the national examination and who intends to have or has residence in Newfoundland and Labrador;

A midwife from a jurisdiction outside Canada who has successfully completed a recognized assessment and skills improvement/bridging program and has successfully passed the national examination and who intends to have or has residence in Newfoundland and Labrador.

9.2 Approve the program of assessment and skills to be developed within Newfoundland and Labrador as a one-time offering. (See Recommendation 7)

9.3 Develop a broad scope of practice that includes skilled assessments of at risk newborns, aspects of well woman health assessments, pre-conception advice and well-baby care to 1 year. A requirement for continuing education is to include completion of a program such as Acute Care of at Risk Newborns (ACoRN)[61] or S.T.A.B.L.E. that focuses on post resuscitation and pre-transport of ill newborns.[62]

Include also in the scope of practice the possibility for individuals to add advanced skills that are especially suited to remote locations, such as first assist at operative births, emergency evacuation of products of conception in situations of early pregnancy hemorrhage, vacuum assisted birth for emergency fetal concerns; such skills to be recognized when individuals obtain suitable preparation. Programs such as Advances in Labour and Risk Management (ALARM)[63] or Advanced Life Support in Obstetrics (ALSO)[64] that cover emergency obstetric problems are examples of recognized offerings.

9.4 Design the regulations about prescriptive authority and procurement of laboratory tests by category of drug or lab test rather than including specific medications or specific tests in the regulation. The latter approach may prove difficult to amend when change is needed. Practice policies and guidelines can set out detailed approved lists and are amenable to rapid alteration.

9.5 Develop criteria for renewal of registration that reflect professional competence. Avoid defining competence exclusively as attendance at a specified number of births in specified locations.

9.6 Neither mandate nor prohibit home birth as a condition of practice or ongoing registration but rather focus on policies/standards that promote safe care. Practice sites will need flexibility to determine interest in home birth and to define protocols suited to varying locations.

9.7 Define the qualifications for second attendants at home births; do not require that two midwives attend hospital or home births. Midwives should work collaboratively with nurses, respiratory therapists or others who attend at births. There is no evidence to support a requirement for two *midwives* to be present, although two *persons* with appropriate qualifications should always attend home births.

9.8 Require that midwives participate in regular interprofessional risk management/quality assurance activities. These activities should focus on primary maternity care, where current research, best practices and protocols for local practice are discussed. Managing Obstetrical Risk Efficiently ($MORE^{OB}$) is an example of a suitable program.[65]

10.0 We recommend to the government of Newfoundland and Labrador that consideration be given to establishing contractual agreements with one or more of the seven universities in Canada that offer Midwifery Education to **support a small number of designated places for future students from the province.**

Implementing Midwifery in Newfoundland and Labrador:

Report and Recommendations

December 2013

1.0 Introduction

In 2010 legislation to regulate the practice of several professions, including midwifery, received Royal Assent in Newfoundland and Labrador. No midwives have yet been registered under the Health Professions Act and several steps must be taken to accomplish that end. There are individuals within Newfoundland and Labrador who have midwifery education, who wish to have legal recognition that would permit them to provide midwifery services. However there are no designated midwifery positions within provincially funded health care services for them or for midwives in other provinces/territories who would like to live and work in Newfoundland and Labrador.

We were engaged as consultants by the Department of Health and Community Services in the spring of 2013 to undertake work leading to recommendations "on the implementation of a flexible and adaptive midwifery model for the Province built upon better utilization of existing resources to ensure a sustainable effective and efficient system." We gathered information about the geography, population, history of midwifery in Newfoundland and Labrador, existing maternity care service providers and current data on maternal-newborn outcomes. We listened to the views, concerns and hopes of many individuals and organizations about having midwives in Newfoundland and Labrador. We talked with individuals and reviewed relevant literature related to the provision of maternity care, especially in rural and remote settings.

We strongly support the establishment of midwifery in the province as part of primary maternity care services. Investing in the regulation, deployment and support of midwives will contribute to improved maternity care services and better health for mothers and infants. We base this assertion on our knowledge of midwifery in many parts of Canada and elsewhere and on the specific situation of Newfoundland and Labrador.

The detailed information that supports our stance is set forth in subsequent portions of this report. We begin by defining midwifery to establish a common understanding of the profession. Parts 3 and 4 provide information about maternity care services in Newfoundland and Labrador. Parts 5 and 6 describe the larger context of midwifery in Canada and evaluative studies of midwifery care and costs. We then turn to the specific situation of midwifery in Newfoundland and Labrador in Part 7 before presenting our recommendations.

2.0 What is Midwifery?

The World Health Organization (WHO) describes midwifery as follows:

> *Midwifery encompasses care of women during pregnancy, labour, and the postpartum period, as well as care of the newborn. It includes measures aimed at preventing health problems in pregnancy, the detection of abnormal conditions,*

the procurement of medical assistance when necessary, and the execution of emergency measures in the absence of medical help. WHO encourages countries to better recognize midwifery as a profession and support midwives as an essential pillar of the maternal and newborn healthcare workforce.[1]

The International Confederation of Midwives (ICM) is a worldwide organization that represents midwifery at the global level, provides continuing education and, importantly, sets standards for practice, education and regulation that assist countries in developing common approaches.

Its definition of midwifery emphasizes key aspects of the midwife's role:

- *partnership with women to promote self-care and the health of mothers, infants, and families;*
- *respect for human dignity and for women as persons with full human rights;*
- *advocacy for women so that their voices are heard;*
- *cultural sensitivity, including working with women and health care providers to overcome those cultural practices that harm women and babies;*
- *a focus on health promotion and disease prevention that views pregnancy as a normal life event.*

In addition to independently providing highly skilled care during pregnancy, labour and the postpartum period, ICM's description of the midwife also notes:

> *The midwife has an important task in health counselling and education, not only for the woman, but also within the family and the community. This work should involve antenatal education and preparation for parenthood and may extend to women's health, sexual or reproductive health and child care. A midwife may practise in any setting including the home, community, hospitals, clinics or health units.*[2]

Midwifery in Canada adheres closely to this description.[3] Midwives are considered specialists in normal birth. On their own responsibility, they provide continuity of care through the pregnancy, labour and the postpartum period for six weeks or longer for women and their well newborns. Midwives promote wellness through education and support, integrating social and cultural aspects of women's lives. They make timely referrals for abnormal findings and manage emergency situations when they arise.

3.0 Maternity Care in Newfoundland and Labrador

This part of the report provides a broad overview of births in the province, their number, locations and the services provided to mothers and babies, and the implications for midwifery that result from the findings.

3.1 Birth numbers and places

Maternity care services are provided in Newfoundland and Labrador by four Regional Integrated Health Authorities (see map in Appendix A). The numbers of births in each of the Health Authorities reflect the size of the population ranging from approximately 2700 live births per year in Eastern Health in 2012 to fewer than 500 in Labrador- Grenfell Health.[4]

The total number of live births in Newfoundland and Labrador has declined from 4,863 births in 2008 to 4,367 in 2012[4], a 10% reduction. Census data show a decline in the proportion of the female population in the childbearing age group (15-45) in Newfoundland and Labrador. In 2012 this group constituted 35% of all women compared to 42% of all women in 1971.[5] Despite this overall trend, individuals that we talked with commented upon the increased number of young families moving from other parts of Canada to the province.

Table 1
Number of Live Births in Regional Integrated Health Authorities and in Hospitals in Newfoundland and Labrador in 2008 and 2012

Regional Integrated Health Authority	Hospital and Location	2008	2012
Eastern Health		**2989**	**2743**
	Burin Peninsula Health Care Centre, Burin	150	129
	Carbonear General Hospital, Carbonear	237	139
	Dr GB Cross Memorial Hospital, Clarenville	169	144
	Health Sciences Centre, St John's	2551	2454
Central Health		**759**	**604**
	Central Newfoundland Regional Health Centre, Windsor-Grand Falls	377	292
	James Paton Memorial Hospital, Gander	326	259
Western Health		**670**	**585**
	Western Memorial Regional Hospital, Corner Brook	643	574
	Sir Thomas Roddick Hospital, Stephenville	13	9
Labrador-Grenfell Health		**445**	**435**
	Captain William Jackman Memorial Hospital, Labrador City	82	80
	Labrador Health Centre, Happy Valley-Goose Bay	232	230
	The Charles S Curtis Memorial Hospital, St Anthony	106	82

Source: Newfoundland and Labrador Centre for Health Information, August 2013[6]
Note: Total births for a Health Authority differ from the total births in hospitals within the Health Authority because residence of mothers may differ from place of birth.

There are now 10 hospitals that provide care to women for labour and birth, 4 in Eastern Health, 2 in Central Health, 1 in Western Health and 3 in Labrador-Grenfell Health (see Table 1). The uneven distribution of the population across Newfoundland and Labrador is reflected in the widely different birth numbers per hospital which varied in 2012 from a low of 9 (reported by Sir Thomas Roddick Hospital in Stephenville, which has now closed its maternity service) to a high of 2454 at the Health Sciences Centre in St John's. Clearly, the urban areas contribute most of the births; rural and remote areas contribute fewer, but births occur in more settings.

Because the population is widely scattered across parts of the Island and Labrador, it is a given that many women will travel considerable distances to access maternity care. This is especially true in the Western and Labrador-Grenfell Health Authorities with one and three hospitals respectively that provide maternity care. While population numbers are small, the Labrador-Grenfell area has the highest birth rate (number of births per 1000 women) in the youngest age groups (15-19 years, 20-24 years).[7]

In the Western and Labrador-Grenfell Health Authorities many women must leave home to obtain hospital care for birth. In the most remote communities, women must leave well ahead of the due date and await birth in a distant community. The requirement that pregnant women leave their families and their home communities and traditions to await birth affects Aboriginal women in particular. Such policies are common in remote and isolated communities across Canada and were intended to provide increased safety for mother and infant. The high cost of cultural and social isolation, family disruption and lack of community participation in birth in Aboriginal communities has seldom been taken into consideration when policies and procedures are devised but is well documented by social scientists.[8-11] A 2013 guideline from the Society of Obstetricians and Gynaecologists of Canada (SOGC) supports greater recognition of the needs of Aboriginal women and families.[12]

3.2 Maternity Care Providers

Every community requires access to primary maternity care, meaning the level of services needed by the large majority of pregnant women who experience normal birth or have minor complications. Primary maternity care services in Newfoundland and Labrador are provided by both family physicians and obstetricians; generally family physicians provide at least some part of a woman's prenatal care but most labour and birth care is provided by hospital nurses and obstetricians even for normal births. One exception is St Anthony where nurses with midwifery training deliver babies. The recruitment of nurses who had midwifery qualifications from the United Kingdom to work in Grenfell sites dates from the late 1800's.[13]

Regardless of the number of births in any one place, the general expectation is that health professionals must be available 24 hours/day, 7 days/week, 365 days/year. Labour and birth are unpredictable in their timing and unexpected events might occur. When births are infrequent, however, it is a challenge to have sufficient staff around the clock and ensure also that staff members have time off. In small units where generalist nurses and doctors must attend to a variety of patients throughout the hospital it is difficult also to have a concentrated focus on maternal and infant care and maintain the skills and confidence to manage a variety of infrequent but important complications, such as shoulder dystocia, postpartum hemorrhage, and unwell babies. Because of those very problems, hospitals like to have specialist obstetric and pediatric physicians continually available, even when there are few births per year.

The list of obstetrician-gynaecologists from the College of Physicians and Surgeons of Newfoundland and Labrador has 38 specialists with addresses in the province.[14] A majority (21) are in St John's and not all include maternity care in their practice. All hospitals outside St John's with maternity services have at least one obstetric specialist. There are pediatric specialists in each community with maternity services on the Island, but none listed in Labrador.[14] Interviewees stated that newborns are transported increasingly to St John's for specialized neonatal services, even for moderate illness or just perceived risk.

Family doctors participate in maternity care although they are more likely to provide prenatal care than intrapartum (labour and birth) care. According to the 2010 National Physician Survey[15] the percentage of family doctors who provide intrapartum care was 13% in Newfoundland and Labrador. Overall in Canada the percentage is lower at 11% with declining numbers being seen in all parts of Canada.

Because of consolidation of maternity units in hospitals, prenatal care may take place in a location distant from the place of birth. We understand from our consultations that most family physicians in urban areas hand over care to specialists in the latter part of pregnancy. Postnatal care may be done by public health or other community clinics that are separate from prenatal providers. These patterns of care create few possibilities for continuity of provider through the childbearing period and diminish the possibilities of a known provider attending the birth. The fragmentation of care makes it difficult to build relationships where women's views about care options are known and taken into account.

Prenatal and postnatal services such as prenatal education, breastfeeding support, parenting programs and well-baby assessments are included within community health programs. Some private pay services also exist, e.g. doulas (labour support) and lactation consultants.

Best practice guidance is provided to maternity care providers through the Newfoundland and Labrador Provincial Perinatal Program and by the Provincial Perinatal Advisory Committee. These are both interprofessional committees including physicians, nurses, and representatives from the aspiring midwifery community.

3.3 Discussion of findings and implications for midwifery

The diversity of communities and the access issues that arise because of the geography and climate are factors that will always influence the provision of health care services in Newfoundland and Labrador. Maternity care is especially impacted by those factors since births occur at any time of the day or night in all areas of the province. Intrapartum (labour and birth) care has been consolidated into fewer sites which creates frequently a separation of prenatal and postnatal care from intrapartum services and results in more women traveling greater distances to reach a hospital site. Intrapartum care relies currently on hospital nurses and increasingly on obstetric specialists for most births.

Internationally, midwives are considered to be experts in normal birth. Because they focus entirely on the maternity cycle and they provide care on their own responsibility to healthy women and infants, they could be a valuable participant in around-the-clock attendance at normal births. Beyond conducting normal deliveries, their expertise is important in prenatal, postnatal and newborn care. They care for women and infants with normal findings and are continually watchful for possible or actual complications. They can promote greater continuity of care by engaging with the woman and her family so that plans, preferences and options for care are considered, understood and followed through.

The province's history includes midwives, yet they have almost no presence currently in the provision of primary maternity care. Within the past few months the nurses/midwives in St Anthony who have conducted births for many years have been informed that a physician should be present for all births so the one remaining trace of midwifery services may disappear.

Conversely, in many parts of Canada midwives are increasingly providing primary maternity care. Their educational preparation and skills are well suited to a variety of sites. Midwives practice in rural and very remote locations as well as in large urban communities. They are providing care to women who have widely different living situations as well as varied social and cultural backgrounds.

4.0 Maternity Care Outcomes in Newfoundland and Labrador

We reviewed information from the Newfoundland and Labrador Centre for Health Information (NLCHI) and the Canadian Institute for Health Information (CIHI) about maternity care outcomes. CIHI collects information from all provinces and territories on important indicators of maternal and newborn health. We will focus on two indicators, caesarean birth and breastfeeding, because Newfoundland and Labrador has the highest rates in Canada of the former and lowest rates of the latter.

4.1 Caesarean Births

Information published by CIHI as recently as July 2013[16] shows that Newfoundland and Labrador continues to have the **highest** rates of caesarean delivery in the country. The overall caesarean rate and its two components are shown in Table 2 below. The primary caesarean rate refers to women having a first caesarean (not necessarily a first baby since there could have been a previous vaginal birth(s). The repeat caesarean rate applies to women who have had one or more previous caesarean births. All three rates for Newfoundland and Labrador are higher than the Canadian average and in fact are the highest in the country.

Rates of caesarean births across this country and elsewhere continue to rise, but both the primary caesarean rate and the repeat caesarean rate from Newfoundland and Labrador are the highest in Canada. The causes of high rates are not easy to pinpoint and appear to arise from differences in the childbearing population, such as older age at first birth, higher prevalence of obesity/overweight as well as from changes to obstetric surgical practice that have made caesareans safer than in the past.

Variations in medical practice contribute to higher rates also. This is most clearly seen in differences in repeat caesarean section rates. The 91.5% rate of repeat caesarean for Newfoundland and Labrador indicates that the vast majority of women who have a first caesarean have a caesarean for subsequent births. This is in contrast to other provinces; Manitoba and Saskatchewan have the lowest rates of repeat caesarean section in the country (72% and 76% respectively).[16]

Table 2
Caesarean section rates for Canada, and Newfoundland and Labrador
2011-2012

	Canada	Newfoundland and Labrador
Overall caesarean rate (% of total births)	27.1	31.0
Primary caesarean rate[1]	18.0	21.0
Repeat caesarean rate[2]	82.5	91.5

[1] % of women giving birth who have a first caesarean section
[2] % of women giving birth who have had a previous caesarean section

An extensive report published in the USA concluded that its review of information added stronger evidence that vaginal birth after previous caesarean (VBAC) is a reasonable and safe choice for the majority of women with a prior caesarean section.[17] The Society of Obstetricians and Gynaecologists of Canada (SOGC) states in its practice guideline about vaginal birth after previous caesarean: *"A trial of labour after Caesarean should be considered in women who present for prenatal care with a history of previous Caesarean birth.... in most cases, successful vaginal birth can be safely achieved for both mother and infant."*[18] It appears instead that policies and practices in Newfoundland and Labrador more closely follow an approach of nearly universal repeat caesarean section.

Findings from the 2010-2011 outcomes report of midwifery In Ontario[19] showed a caesarean section rate of 15% for midwifery clients compared to a provincial rate of 28%; similarly the repeat caesarean section rate for midwifery clients was 46% compared to the provincial rate of 84%. It is clear that women cared for by midwives are a low risk population and would be expected to have low rates of intervention, but importantly, the women cared for by midwives who have had previous caesarean sections also have low rates of caesarean sections. In a study of maternal outcomes in British Columbia, women in midwifery care were just as likely to have a first caesarean section as women (matched for obstetric risk) who were cared for by physicians, *but* 98% of women in midwifery care who had a previous caesarean section chose to plan a vaginal birth while 59.4% percent of those in physician care chose a repeat section.[20]

The increased number of women who are undergoing caesarean section is raising many concerns in the obstetric field.[17] Rates of infection, hemorrhage (especially hemorrhage requiring blood transfusion) and thrombosis (blood clot formation) is higher in women who have caesarean sections compared to those who give birth vaginally. Women who have caesarean sections are more likely to have complications in subsequent pregnancies and the rate of complications increases with the number of caesareans. The babies of women who are delivered by caesarean section are more likely to have respiratory difficulty and to be admitted to special care nurseries. Women who have caesarean sections also are more likely to have difficulty initiating and maintaining breastfeeding.[21]

There is increasing evidence of childhood and adolescent obesity in children born by caesarean.[22] Observations such as this have led to a recent research effort to learn more about the impact of labour and birth on the development of children's immune and metabolic systems.[23] The rising rates of caesarean birth are not without consequence. While the procedure can be lifesaving in critical situations, the rising rates are contributing to increased maternal and newborn ill health. Efforts to reduce high rates are important for improved health of both mothers and babies. High caesarean rates also lead to increased costs because

of added resources needed for this surgical procedure and longer stay in hospital for both mother and baby.

4.2 Breastfeeding

Canadian data show that NL has the **lowest** rates of initiation and duration of breastfeeding in the country. According to Statistics Canada in 2012, 59% of new mothers initiated breastfeeding in Newfoundland and Labrador compared to 90% for Canada overall.[24] Findings from a NLCHI survey in the same year (2012) showed 62% of mothers in Newfoundland and Labrador began breastfeeding compared with 87% in Canada.[25] Either finding demonstrates a much lower rate of breast feeding than is desirable.

Health Canada, the Canadian Pediatric Society and other nutritional guides recommend exclusive breastfeeding for six months. The benefits to infants of sustained breastfeeding through the first six months of life are well documented and include optimal growth, absorption of nutrients, maturation of the intestinal system, protection against infections, enhanced cognitive development and prevention of sudden infant death.[26-29]

Sustaining breastfeeding for up to two years or longer with appropriate other foods is also deemed important for the nutrition, growth and protection from infection of infants and toddlers.[26] Newfoundland and Labrador data show that only 17% of mothers continue to breastfeed exclusively for six months.[24] Increasing the number of women who breastfeed and its duration can yield health benefits for infants and reduced costs for the health care system. There is a clear gap between present infant feeding practices and the evidence about best infant health.

Some of the studies about the impact of midwifery care that are reported in greater detail in Parts 6.1 and 6.2 have included findings about breastfeeding.[30-33] When comparisons have been made between care by midwives compared with "usual" care, the percentage of women who initiate breastfeeding and continue for defined time periods consistently favour midwifery care. This likely reflects the time midwives invest in learning about breastfeeding, the time they spend with women teaching about breastfeeding and providing assistance to solve common breastfeeding problems.

4.3 Discussion of findings and implications for midwifery

We have reviewed the information about high caesarean section rates and low rates of breastfeeding because both are important issues and both have implications for the role of maternity care providers. Providing information and discussing the risks and benefits of practices (such as infant formula feeding or elective repeat caesarean section) with women are critical responsibilities that are best achieved when there is sufficient time for information exchange and when there is an ongoing relationship between the provider and the pregnant woman. Pregnancy and early parenthood are known to be critical times for teaching about and encouraging good health, such as fostering improved infant feeding practices.[29,34,35]

Midwives place an emphasis on forming a continuing relationship by following women through pregnancy, labour and the postpartum period. They provide extensive health information and involve women in decisions about their care. Their prenatal appointments are generally longer and may include group discussions with mothers about care of themselves and their babies. They can contribute to quality improvement initiatives directed toward increasing breastfeeding and reducing interventions, such as caesarean section, that can contribute to ongoing health benefits.

5.0 Implementation of Midwifery in Canada

This part of the report describes the present situation of midwifery across Canada. Several of the points made in the 3.3 and 4.3 (Discussion and implications for midwifery) about the ways midwives work will be re-emphasized because they are an important part of the overall picture of Canadian midwifery. The larger context is useful in learning about approaches and policies that have or have not worked well and that have relevance for implementing midwifery in Newfoundland and Labrador.

5.1 Regulation

While the history of midwifery in Canada can be traced to its earliest settlements, the regulation of midwives in contemporary health care systems originated in Ontario in 1994. During the nearly two decades since then, Alberta (1998), British Columbia (1998), Quebec (1999), Manitoba (2000), the North West Territories (2005), Saskatchewan (2008), Nova Scotia (2009) and Nunavut (2011) also have regulated midwifery practice. New Brunswick has passed legislation but not yet registered midwives. Very recently, funding for the work of the Midwifery Council of New Brunswick to implement midwifery was suspended, apparently due to budget restrictions.[36] Prince Edward Island and the Yukon have no provision for midwives.

Each province and territory with regulation recognizes midwifery as a distinct profession. Members are governed by a regulatory college (or similar) that sets standards and policies, registers members and carries out quality assurance activities. Promotion of a high standard of midwifery care across the country is part of the mandate of the Canadian Midwifery Regulator's Consortium.[3] This group provides a forum for Canadian regulators and facilitates a common national perspective.

With regulation established in most provinces and territories, the profession has grown, albeit slowly. According to the Canadian Association of Midwives (CAM) in 2012 there were 1066 registered midwives in Canada, more than half of them in Ontario. The requests for midwifery care continue to exceed the available capacity and there is pressure to increase the number of midwives in order to keep pace with the increased demand.[37]

The practice of midwifery across the regulated provinces and territories is based on a common set of professional competencies that reflect the expertise of midwives in supporting normal pregnancy and childbirth, early recognition and timely referral of abnormal findings and managing emergency situations.[38] Midwives have legal authorization to independently order a range of laboratory and imaging investigations, prescribe medications, admit and discharge women (and their babies) from hospital, and refer women and babies to physicians for conditions outside their scope of practice. Midwives discuss nutrition, early breastfeeding, infant care and well woman care. They focus on developing good interpersonal relationships with women and their families and including the woman in decision making about her care.

There are variations in the scope of practice e.g., midwives in the Northwest Territory have a scope that includes postnatal and newborn care up to one year and greater community health involvement. Another example is variation in independent prescribing authority. British Columbia has a more extensive formulary for midwife prescribing than Ontario, although the latter was revised in January 2010 to expedite treatment and reduce unnecessary physician consultations. The scope of practice may include added skills for individuals with appropriate preparation. Examples of added skills include assisting at operative births, providing well-woman gynaecologic assessments and contraceptive counseling beyond the usual six week postpartum period. Added skills are often helpful in more remote settings where there are fewer health care personnel.

5.2 Registration requirements

To be a registered midwife in any of the provinces or territories that regulate midwifery in Canada, an individual must have graduated from an approved program, which currently means one of the seven university programs in Canada that offer a Bachelor's degree in midwifery. All jurisdictions either now require

or are implementing the requirement that applicants pass the Canadian Midwifery Registration Examination.

Graduates of Canadian educational programs in midwifery typically spend more than half of their four year program in supervised clinical practice and must have conducted at least 40 births and attended almost twice that number in order to meet program requirements. The curriculum includes not only biological sciences but extensive study of social and cultural determinants of health; cultural competence to work with varied groups of women is a core requirement.

Midwives who come to Canada from other countries must demonstrate a comparable educational background and complete an approved program of competency assessment and a skills development/ bridging program based on Canadian standards. They also must pass the Canadian Midwifery Registration Examination.

5.3 Organization of care

Canadian midwives typically work in groups to provide continuous (24 hours/day, 7 days/week) coverage while ensuring that individuals have time away from work. In general, midwives organize visits and on-call time to provide for having a known midwife at the birth. Some provinces require that two midwives attend every birth, one to primarily care for the mother, the other to care for the baby. This provision is built into the calculation of workload and the payment formula, but it has made on-call scheduling more difficult and has reduced opportunities for labour ward nurses and midwives to develop a better understanding of each other's strengths and roles. Requiring midwives to 'work alone' isolates them from other practitioners, and can lead to a lack of trust that is essential to collegial relationships.

The scope of practice of midwifery focuses on low risk women and newborns, i.e. essentially healthy women whose pregnancy and birth is not complicated by chronic or acute conditions that put mother and/or baby at high risk. Midwives therefore have standards that list indications for which they must seek a medical opinion about ongoing care or transfer responsibility for care to a physician (frequently a specialist in obstetrics or pediatrics).

In all jurisdictions, midwives have hospital admitting and discharge privileges and they attend births at home. Women who are low risk and meet defined criteria can opt for a midwife attended home birth; similarly women who desire a hospital birth will also be attended by a midwife. Following an uncomplicated birth in hospital, women are usually discharged home within 24 hours. The median (meaning half of the women had shorter and half had longer) length of stay in hospital for 38,608 women with singleton births admitted under the care of a midwife in Ontario between 2005 and 2010 was 1.2 days; for newborns the

median was 1.0.[39] (These data include women who sustained complications and had care transferred to a specialist.) Whether the birth occurs at home or in hospital there is extensive postpartum follow-up. Typically midwives visit a new baby and mother 3 times in the first week, and 3-4 more times over the 6 week period.

Some regulatory bodies require every midwife to attend a minimum number of births at home and in hospital in order to evidence competence in both settings and maintain registration. Meeting such requirements can be difficult in all locations because of local customs about place of birth, extreme geographic/climate conditions that curtail home birth, or lack of sufficient resources to attend home births.

At the outset of regulation in Quebec, midwives were not permitted to attend home births nor did they have hospital admitting rights. Quebec invested in birth centres and the majority of midwifery births continue to take place in them. The option of a birth centre is now possible in more settings: two have opened in Alberta, one in Manitoba and two are slated to open soon in Ontario. Birth centres add a choice but do not remove interest in home or hospital birth. In Quebec, restrictions on both were eventually removed. The experience of Quebec shows that "prohibiting" home birth does not succeed but rather drives it underground, ultimately making it less safe.

Increasingly there are midwives working in partnership with physicians and/or nurse-practitioners. Collaborative practices have formed in several locations in Canada, some with teams that include obstetricians and others with family physicians.[40] The integration of midwives into interprofessional practices can potentially decrease the workload and on-call time of physicians since midwives can attend uncomplicated births on their own responsibility. Collaborative practices often focus on special populations, such as recent immigrants, Aboriginal women, or socially marginalized women.

5.4 Funding of midwifery services

All midwifery services are covered under government funded programs, i.e. women are not required to pay privately for midwifery care. Initially in Alberta, midwifery practice was legalized but not covered within government funded services. That changed in 2009 after strong public reaction and loss of almost all the midwives to other provinces.

Payment to midwives is administered in one of two fundamental payment models:

(1) midwife as independent practitioner: government (or intermediary agency) pays a fee for each woman's care through pregnancy, birth and the

postpartum period; caseload capped at a predetermined maximum number of women (BC, Alberta, Ontario);

(2) midwife as employee: salaried for full-time or part-time work based on an agreed description of midwifery work (Saskatchewan, Manitoba, Quebec, Nova Scotia, Northwest Territory).

The capitation (fee per woman) model works well in areas where caseloads are large enough to sustain a group practice. Midwives who work in this model value the ability to scale their workload to best fit their personal lives and value the independence the model provides. Capitation models generally specify an upper limit to the caseload size. For a full-time midwife this is approximately 40 women per year that receive full prenatal, labour, postnatal and newborn care. In addition, each midwife is expected to attend added home and/or hospital births as the second professional attendant to provide immediate newborn care. The midwives are financially accountable to a government office/agency but retain control over the size of the practice, the type of clinic/office facility, the employment of office staff and the organization of their work lives.

Salaried positions are not necessarily tied to the size of a caseload because of working in rural or more remote settings or with high needs populations where greater flexibility is called for in defining the workload. For example, there may be need for increased prenatal teaching and support, parenting skills, well woman health assessments, or extensive postnatal visiting, depending on the patient population. Salaried positions have greater capacity for innovative roles.

Salaries for midwives most often flow from a health authority or other government funded service such as community health clinics. Information about 2011 salaries was obtained from the Canadian Association of Midwives. With the exception of one province at $50,000 (negotiations are underway to increase this amount) beginning salaries varied from $70,000 to $77,000 and maximum from $84,000 to $91,000, excluding benefits.

Employed midwives have sometimes experienced difficulty fitting into the organizational structure in which they are hired. Existing policies have been incompatible with the varied hours and varied settings of midwifery work; lines of accountability have been inappropriate when managers were unfamiliar with professional standards and the demands and pressures of maternity care. Difficulty in resolving accountability issues were, at the least, one major factor in the difficult integration of midwives in Halifax, Nova Scotia.[41] This situation has resolved now and full midwifery services, including homebirth, are available.

Either payment model can include travel subsidies for home visits and a portion of office expenses, but this is highly variable across the provinces. Direct remuneration varies also: midwives appear to earn more in the capitation model

but employed midwives receive benefits on top of their base salary and often receive added time off when their work hours exceed a set limit.

All registered midwives carry professional liability insurance. Except for British Columbia where the government underwrites a policy, all other jurisdictions have policies underwritten by the Health Insurance Reciprocal of Canada (HIROC). Midwives in three provinces contribute to the premium whereas government provides full coverage in others.

5.5 Implications for midwifery in Newfoundland and Labrador

The integration of midwives into the formal health care system is not yet Canada-wide, but over the past 20 years almost all provinces and territories have introduced midwives into maternity care. Their integration into provincial health care systems and into local settings has not been without challenges. Some of the decisions taken in the initial years, such as private payment for midwifery care, restricting access to home birth, and limited prescribing authority have changed as experience with and confidence in midwives has grown. Of the two fundamental payment models, salaried positions appear better suited to rural and remote settings where greater flexibility in defining roles is indicated.

Of help to Newfoundland and Labrador in its consideration of integrating midwives is the accumulated experience from across the country, which can be useful for anticipating and resolving issues. Of help also is the existence across Canada of a consistent approach to midwifery education, and to regulation and practice. There are national competencies, a national examination and an agreement that facilitates the registration of midwives from one jurisdiction to another. This consistent approach has helped build unity, has strengthened the profession and facilitated integration as successive provinces/territories have regulated midwives.

Our own experience indicates that one of the keys to smooth(er) integration, from the governmental to the local level, is collaborative planning by all stakeholders. This is important at the provincial level not only for joint development of policies like consultation standards, payment of consultant fees, extent of prescribing authority, but to address concerns about introducing a new profession into the existing workforce. Nurses may worry they will lose their jobs, physicians that their incomes will be affected, and both may have concerns about joint liability. It is therefore all the more important that the integration of midwifery be a collaborative effort. Introducing midwives means change for other health professionals and ongoing joint attention to quality assurance reviews, assessment of best practices, and regular problem solving forums that assist all providers to work well together at the local community/institution level.

6.0 Evaluations of Midwifery Care

The preceding part of the report described the role of midwives and how they work. In this portion of the report we focus on current literature about the effectiveness of midwifery care and its cost since these are crucial considerations in implementing midwifery.

6.1 International studies of midwifery care

Midwifery care in developed countries has been the subject of numerous studies. In 2006, the Canadian Health Services Research Foundation[42] issued a brief summary of the findings to date, stating that numerous studies from Europe, North America, Australia, and New Zealand show that midwives provide safe and effective care to low risk women. The outcomes are comparable to physician care whether the midwives attend women in hospital, in birth centres or at home.

The Cochrane Library (an extensive repository of evaluations of many aspects of health care) [43] has published reviews of clinical trials involving care by midwives. A 2008 meta-analysis of midwife-led care where midwives provided care prenatally, during labour and postnatally compared with models of medical-led care and shared care (midwife and physician dividing care) included 11 clinical trials that took place in several countries, involving 12,276 women.[30] Midwife-led care was associated significantly with several benefits including: decreased likelihood of prenatal hospitalization; a reduction in the use of regional analgesia, episiotomy, and instrumental births; increased likelihood of a normal vaginal birth; having a known caregiver in labour; feeling in control during labour; initiating breastfeeding; and shorter hospital stay. No differences in adverse effects including fetal/neonatal death were found. The authors concluded that most women should be offered midwife-led models of care and women without substantial medical or obstetric complication should be encouraged to ask for this option.

The most recent Cochrane review (2013)[44] based on 13 trials that involved 16,232 women drew the conclusion:

> *Midwife-led continuity of care was associated with several benefits for mothers and babies, and had no identified adverse effects compared with models of medical-led care and shared care. The main benefits were a reduction in the use of epidurals, with fewer episiotomies or instrumental births. Women's chances of being cared for in labour by a midwife she had got to know, and having a spontaneous vaginal birth were also increased. There was no difference in the number of caesarean births. Women who received midwife-led continuity of care were less likely to experience preterm birth, or lose their baby before 24 weeks' gestation,*

although there were no differences in the risk of losing the baby after 24 weeks, or overall. All trials included licensed midwives, and none included lay or traditional midwives.

Researchers in the Netherlands reported in 2009 the outcomes of 529,688 women who were cared for by midwives during a period of seven years.[45] They compared outcomes for those who intended a home birth with those who planned a hospital birth and found no increased deaths or serious health problems in babies among low-risk women who planned a home birth. They emphasized the importance of having a maternity care system with well-trained midwives and a good transportation and referral system in achieving good outcomes.

A 2011 large study about place of birth in the United Kingdom compared midwifery-led care in home, birthing centre and in-hospital units with obstetrical-led care of low risk women. Women who received midwifery-led care in all settings were more likely to have a normal birth, and less likely to have instrumental or operative delivery, or to have analgesia or other interventions such as labour augmentation or episiotomy. Outcomes for newborns were similar in all groups except that babies in midwifery-led groups had higher rates of breastfeeding.[31]

6.2 Canadian studies of midwifery care

There are smaller studies of the implementation and effectiveness of midwifery in Canada. Researchers in British Columbia compared women receiving physician care during labour and birth to women who planned a hospital birth under the care of midwives. The midwifery group had significantly fewer interventions such as caesarean section, narcotic analgesia, electronic fetal monitoring, amniotomy, and episiotomy. Adverse outcomes (deaths and serious illness) for babies did not differ between the groups.[20]

A second study from British Columbia in 2009 compared outcomes for three groups: women cared for by midwives who planned home birth, women cared for by midwives who planned hospital births and women (who met the same low risk criteria) cared for by physicians who planned hospital birth. The planned home birth group had very low and comparable rates of perinatal death and reduced rates of obstetric interventions and other adverse perinatal outcomes compared with those who planned hospital birth attended by a midwife or physician.[46]

A study in Ontario of over 13,000 midwifery-attended births at home and in hospital from 2003-2006 showed very low overall perinatal and neonatal mortality (1 death per 1000 births) and no difference between those cared for at home and those in hospital.[47] The authors concluded that midwives who were well integrated into the health care system with good access to emergency

services, consultation, and transfer of care provided care that resulted in good outcomes for women planning either home or hospital births.

The Canadian Public Health Agency published findings in 2009 from a large Maternity Experiences Survey about women's views of labour and birth. Eighty percent of all the women surveyed reported that their overall experience of labour and birth was either "very positive" (53.8%) or "somewhat positive" (26.2%). More women (71.1%) attended by midwives at birth reported being "very positive" about their overall experience of labour and birth than those attended by other health care providers.[48]

The Maternity Experiences Survey showed also that women whose primary provider had been a midwife were half as likely to experience induction, 7 times more likely to have a medication-free delivery and were more likely to initiate and continue breastfeeding at 3 and 6 months.[32]

A unique model of collaborative practice between midwives, family physicians, community health nurses and doulas began in Vancouver in 2004. The birth outcomes of over 1200 women, when compared with a matched cohort who received usual physician-led maternity care, showed that women in the program of interprofessional care were less likely to have a caesarean delivery, had shorter hospital stays on average and were more likely to breastfeed exclusively than women receiving usual care.[33]

An assessment of the experience of Inuit women in Nunavik, Quebec from 2000-2007 revealed low rates of intervention with safe outcomes in the more than 1300 young, largely multiparous "all risk" Inuit group. About 14% of births occurred outside Nunavik with the most common transfers being caused by preterm labour and pre-eclampsia. There was no caesarean section capability. The local birth facilities involved a team approach with midwives, physicians and nurses: 85% of births were attended by midwives. This model of care developed over a long period and has been a sustained community- professional collaborative effort to screen appropriately, to support women who must be transferred (usually to Montreal), to return birth to remote communities and build midwifery skills in Aboriginal women.[49]

6.3 Studies about the costs of midwifery care

The Canadian Institute for Health Information (CIHI) published information on the costs of birth in 2006. The extensive document covers prenatal care, intrapartum (labour and birth) care and reproductive technologies. Their published costs for births are now a decade old (2002-2003) and were stated to average $2700 per patient for an uncomplicated vaginal delivery and $3200 per patient for a complicated delivery. The study states the following:

Some research suggests that the care that a midwife provides might reduce costs for uncomplicated vaginal deliveries because fewer resources are needed during labour and delivery. Also, fewer interventions may be required, which may result in earlier discharge. Similar cost savings associated with midwife-attended low risk pregnancies have been found in the United States and the United Kingdom.[50]

A 2012 comprehensive study in England of place of birth found that the cost to the National Health Service of labour, birth and postpartum care including costs of complications that were incurred was lower for birth planned at home, in a freestanding midwife birth unit, and in a separate hospital unit for midwives when compared with birth in an obstetric unit in hospital. The economists concluded that for women having their second or later child, planned birth at home generated the greatest cost effectiveness when benefits (reduced interventions, reduced use of resources) and outcomes (very low rates of complications) were assessed.[51] There is no comparable large Canadian cost study nor does Canada have the range of birth settings described in the English study.

Studies of costs are difficult to conduct because of different payment methods for different providers and the different use of resources. A small study of the costs of care when women were cared for by midwives compared with similarly low risk women cared for by family doctors was done several years ago in Ontario. The comparison showed that hospital costs for midwifery care were lower primarily because of shorter hospital stays (unpublished data, personal communication). A comparative study of costs in Alberta also showed lower costs for midwifery care primarily attributable to provision of out-of-hospital services, without an increase in adverse events.[52] Researchers in British Columbia have collected information on costs of midwifery care but are awaiting notice of publication before public release of their findings (personal communication).

6.4 Implications of findings for midwifery in Newfoundland and Labrador

Appendix B includes abstracts for the studies described in 6.2 and 6.3 above. Of necessity this is a selection of published material. We sought systematic reviews of high quality studies, recent findings and studies of direct relevance to the Canadian situation. No studies have found adverse consequences from midwifery care in circumstances where midwives are well integrated and supported to function in their full scope of responsibility. The body of evidence shows favorable results for both mothers and babies. Women experience fewer interventions, babies have very low rates of serious illness. A recent article summarizing the international evidence to date from randomized clinical trials is provocatively titled: “Every Woman Needs a Midwife, and Some Women Need a

Doctor Too."[53] While this is neither feasible nor the objective of midwifery in Canada, it is a policy goal being pursued in several parts of the world.

Costing studies in Canada are not comprehensive, but the findings to date support the proposition that midwives achieve comparable outcomes to physician care for low risk women at lower cost. However, establishing midwifery is a long term investment because it takes policy changes, time and effort to integrate practitioners and a period of time to have sufficient midwives to have an impact on maternity care provision. Any accounting of costs in a province/territory where midwives are being introduced must include not only the direct support of midwives and their services, but also the up-front costs to the health system to regulate and establish midwifery. There are indirect costs to helping problem-solve, establish lines of communication and resolve concerns of administrators and health professionals who have no experience of working with midwives. These added costs must be assessed within a larger context that takes account of potential changes in the mix of professionals who provide maternity care, potential improvements in birth outcomes, the high quality of care that midwives have been shown to provide, and the reduced long-term costs effected by improved mother and child health.

7.0 The Current Situation of Midwifery in Newfoundland and Labrador

In this part of the report we review historical and present factors that can contribute to re-establishing a regulated midwifery profession.

7.1 Midwifery practice

Many communities in Newfoundland and Labrador have a long history of midwifery attended births.[13] The historical accounts of the services provided by midwives in remote and isolated areas are vivid.[54] Midwives continued to work in outports well into the mid-1900s, but with the introduction of health insurance in the late 1950s, births took place increasingly in hospitals.

There were midwives who continued to deliver babies independently in northern sites until quite recently. Nurses with midwifery qualifications delivered babies in Happy Valley-Goose Bay, but no longer do so. Three nurses with midwifery qualifications from the United Kingdom continue to deliver babies at the Charles S Curtis Memorial Hospital in St Anthony. They are formally employed as nurses and until recently carried on with a long standing practice of conducting normal deliveries independently. However, this appears to be changing as they have been directed to have a physician present. The nurses/midwives participate in prenatal care visits and in postnatal care. They report receiving frequent phone calls for advice and support after women leave the hospital.

We heard reports of midwife attended home births in St John's and learned from members of the Association of Midwives of Newfoundland and Labrador (AMNL) that there are inquiries nearly every week about how to find a midwife. Several inquiries have come from women who, having moved to Newfoundland and Labrador after receiving midwifery care in other Canadian provinces for previous pregnancies, are dismayed that no services are available in the province. Some women/couples contract assistance from a doula (a person who provides labour support but has no formal responsibility for care decisions) because they cannot obtain midwifery care and are especially concerned to have support in labour. These anecdotal reports are informal indicators of interest in having midwifery care available. The number of midwife attended births at home appears to be small and we did not learn of any adverse outcomes, but it is of concern that with no registration process in place, there is no means of assessing the competence of anyone practicing currently.

7.2 Achieving regulated status under the Health Professions Act

Newfoundland and Labrador is now one of the few provinces without regulated midwifery. A midwifery act was in existence from 1920 but was largely abandoned by 1950. Members of the Association of Midwives of Newfoundland and Labrador (AMNL) contributed to reports and recommendations about midwifery produced in 1994 and again in 2001 which advocated for the legal recognition of midwives in the provincial health system.[13] The former midwifery act was officially repealed in 2008, providing the opportunity for midwives to be included in the Health Professions Act of 2010.

Achieving regulated status, however, is a complex process. Under the Health Professions Act, the governing body is the Newfoundland and Labrador Council of Health Professionals. Two members of each profession are members of the Council and this body registers those who meet registration requirements. Each profession is to have a College composed of those persons registered in the profession. As an interim measure, two persons from the AMNL have been named to the Council until such time as a College exists. The College has the responsibility to develop, among other items, entry to practice requirements, renewal or recertification requirements, a scope of practice and standards of practice, and a code of ethics.[55] The AMNL has submitted draft documents to Council as a first step.

Forming a College of Midwives will take time since it requires members to be registered in the profession. It is unlikely that anyone now in Newfoundland and Labrador will qualify immediately for registration. Persons with midwifery qualifications from outside Canada who wish to be registered will require an assessment, and perhaps a period of study with mentored practice to meet Canadian competencies. It would seem desirable to organize a one-time offering of such an assessment process within province for the few who may be eligible.

Interprovincial agreements would permit midwives who are now registered and practicing in other provinces to be registered rapidly. There are midwives with ties to and an interest in Newfoundland and Labrador who could be recruited to work in the province.

In cooperation with the Canadian Association of Midwives (CAM) we sent an on-line survey in March 2013 to all CAM members to elicit interest in living and working in Newfoundland and Labrador. Of 171 respondents, 75 had "some interest" and 18 were "very interested" in opportunities to practice midwifery in the province. Of the 93 with some or high interest, 72 were currently working as a registered midwife. Seven respondents currently live in the province and 24 others have life/work experience in Newfoundland and Labrador. Of those who indicated a preference of location, 7 preferred a northern/rural location while 8 preferred the Avalon Peninsula. Seven indicated a need for a "refresher course" or similar opportunity to meet current Canadian standards. These individuals may be the 7 who currently reside in Newfoundland and Labrador and have no ability to practice as midwives until regulation is in place. (See Appendix C for detailed survey results.)

7.3 Expressed views about midwifery in Newfoundland and Labrador

During our site visit and in follow-up telephone calls we encountered a range of views about the establishment of midwifery services. Some persons were highly enthusiastic, others were sceptical about the need for such services and still others were cautiously supportive. There were concerns about the present stress on health care budgets and how a new program could be supported. There were differing views about best locations for midwives: remote locations in need of personnel versus well populated areas with higher numbers of births. There was speculation from interviewees about the public perception of midwives, noting that some would view the return of midwives as going back to "old ways" rather than being a progressive action. None of the people we spoke with opposed midwifery because of concerns about quality of care apart from a general view, despite good evidence to the contrary, that home birth is seen as unsafe.

Medicine and nursing are the two health professions midwives work with most closely. At the national level, the Society of Obstetricians and Gynaecologists of Canada (SOGC) and the Canadian Nurses' Association have policy statements that underline the importance of working collaboratively with midwives.[56, 57] The SOGC statement includes support for the "establishment of midwifery in Canada as a regulated, publicly funded health care profession with access to hospital privileges." The medical and nursing professional organizations within Newfoundland and Labrador were familiar with the history of previous provincial reports recommending implementation of midwifery and are knowledgeable about the regulatory processes that must be in place for midwives to practice.

It is impossible to gauge the extent of public interest. A few women with high interest attended a meeting with us and spoke about a network of contacts who keep each other informed about options for birth care. Their views were identical to those we often hear among young women in urban centres who actively seek information about personal health issues. These women are clear supporters of the strong relationships midwives establish with women in their care.

8.0 Summary Statement and Recommendations

We asserted at the outset of this report that we strongly support the establishment of midwifery in the province as part of primary maternity care services. The information presented in the preceding pages provides the basis for our conclusion that midwives will contribute to improved maternity care services and better health for mothers and infants. We have given much thought to the challenges of integrating midwifery into maternity care in Newfoundland and Labrador. Following are our recommendations for implementation:

1. **We recommend announcement of a 5 to 7 year plan for development of midwifery** within the primary maternity care sector of Newfoundland and Labrador health services. The plan would include support for the costs of:

    - An Implementation Coordinator (see Recommendation 2 for details)
    - Funding midwifery positions and associated costs in up to four initial sites (see Recommendations 3-6 for details).
    - Funding the assessment process of in-province candidates for registration (see Recommendation 7 for details)
    - Funding the out-of-province members of the Transitional College of Midwives (see Recommendation 8 for details)

    The 5 to 7 year plan would include a gradual increase in the number of funded midwifery positions and an increased number of practice sites, with a goal of reaching 20 full time equivalent (FTE) positions in 2018 or beyond. We estimate this number of FTE midwives would care for about 15% of births in the province, a level now being reached in communities in Ontario. An evaluation is recommended at the end of five years to assess the implementation plan and re-set targets as necessary. See Appendix D for a year by year description of the developmental plan.

2. **We recommend that the Department of Health and Community Services appoint an Implementation Coordinator** for a 2-3 year period to oversee and facilitate the myriad policy and practical issues that are part of implementing and facilitating midwifery practice. This person need not be a midwife but should be

familiar with clinical issues and be knowledgeable about administrative aspects of health care policies. For example, it is vital that midwives obtain hospital admitting privileges, be able to order specific laboratory and imaging investigations, prescribe medications, carry out emergency actions and obtain specialist consultations as needed and that specialist fees accommodate such consults. While the regulatory body will be responsible for delineating (for example) the specific medications and investigations that are part of the scope of practice, the implementation coordinator would identify and help align structures and policies within government, health authorities and institutions that will enable midwives to function.

2.1 **We recommend that the Implementation Coordinator form an advisory committee** composed of public and professional members who are familiar with maternity care in Newfoundland and Labrador such as nurses and physicians, health administrators, representatives of the Transitional College, childbirth advocates. The advisory committee would be advocates for midwifery, review policies, protocols and similar documents with a view to their operational impact, help prepare communities for the integration of midwives, and assist with interprofessional collaboration during the formative period of establishing midwifery services.

3. We recommend that midwives be employed by Health Authorities in salaried positions.

We recommend a beginning salary (2013 dollars) of $76-77,000 and a maximum in the high $90 thousands, with benefits (approximately 20%) added. Newfoundland and Labrador will be competing with other provinces to attract midwives and it will be an advantage to recruit individuals who have several years of practice experience. We recommend that the increments in salary extend over an approximate 15 year period to promote retention of senior midwives.

Employers will need to give careful consideration to employment policies and reporting relationships to ensure that policies are not in conflict with professional standards. For example, providing continuity of care to women can often mean irregular and long work hours, but it is important midwives manage those aspects of their work and not encounter employment restrictions. Midwives should be aligned within hospitals or clinics with other primary maternity care providers; such alignment strengthens policies and approaches to normal birth.

4. We recommend the Department of Health and Community Services collaborate with the Association of Midwives of Newfoundland and Labrador to **secure and administer liability insurance** for registered midwives similar to policies obtained in other provinces.

5. **We recommend** that the Newfoundland and Labrador Centre for Health Information **design and manage a midwifery information system** and that periodic reports be issued about the contribution and outcomes of midwifery care.

6. **We recommend the following potential sites for establishing the first midwifery services.** Final selection should be based on considerations of the balance of medical and midwifery resources that can best meet community needs, on community interest, and on a diversity of settings. We do not think the initial services should be labeled "pilot projects" since this implies impermanence.

    - Within Eastern Health: Fund positions for 2 full time equivalent (FTE) midwives to work collaboratively within a family practice group in St John's. The specifics of how the midwives would work within the practice are to be negotiated with those most directly involved. An integrated practice of family doctors and midwives such as exists in Vancouver [58] is a model for consideration.

    - Within Labrador-Grenfell Health: If the three nurses in St Anthony who presently provide many aspects of midwifery care qualify for midwifery registration, we recommend their transition to roles that incorporate a full scope of midwifery practice. (Their unique situation may require that they have dual registration as a midwife and as a nurse in order to also care for non-maternity patients, if that is essential to their full time employment.)

    - Within Labrador-Grenfell Health: Fund positions for 2 or 3 FTE midwives for Happy Valley-Goose Bay who have an interest in the care of Aboriginal women. They would work in collaboration with family physicians in visiting and consulting with primary care practitioners in the prenatal and postnatal clinics in communities outside the city, provide ongoing prenatal care and teaching when women are resident in Happy Valley-Goose Bay awaiting labour and birth, provide breast feeding support in the postnatal period, and be part of the on-call coverage for the birth unit.[*]

[*] We are sympathetic to the views we heard about the potentially damaging effects of policies that separate women from their home for several weeks. Returning birth to local communities is, however, a complex and long term process. An approach of selective evacuation exists in coastal Hudson Bay Nunavik communities. This approach relies on community supports and local birth centres that integrate cultural traditions and culturally appropriate care. A long period of teaching and developing local Aboriginal midwifery skills, mobilizing community involvement and creating new policies was critical to the realization of returning birth to remote communities of Labrador.[12,47] We think it is inappropriate for us to recommend birth centres in remote communities, but we think Aboriginal communities should be supported to consider the policies, facilities and care providers that are best for their mothers and babies.

- Other site(s): Fund positions for one or two FTE midwives for a rural community/communities where an obstetrician-gynecologist and/or a family doctor(s) is leaving, or where additional personnel are needed for better on-call coverage. The midwives would work collaboratively with medical and nursing personnel to provide comprehensive prenatal, labour and birth and postnatal care.

7. **We recommend an assessment program be conducted once within the province** for current residents of Newfoundland and Labrador who have midwifery preparation, current or recent midwifery experience and meet eligibility criteria for such a program. We recommend that a midwife with practice and teaching experience registered in Canada be contracted under the auspices of the Council of Health Professions Registrar to design and conduct the assessment process and arrange individual mentoring to meet the Canadian Competencies for Midwives.

   We considered whether qualified applicants could be sponsored to attend either of the only two programs that exist in Canada for assessment of internationally educated midwives, the International Midwifery Pre-registration Program at Ryerson University in Ontario[59] or the Multijurisdictional Midwifery Bridging Program[60] offered largely through distance learning. The former option means leaving the province for up to a year and the latter option is closed temporarily, with a hoped-for resumption date of Fall 2014. We think a within-province program is preferable to either option.

8. **We recommend the Department of Health and Community Services provide funds to the Council of Health Professions and Registrar to expedite the formation of a Transitional College of Midwives.**

   We recommend that the Registrar and the Council of Health Professions of Newfoundland and Labrador register as non-practicing midwives a minimum of six midwives who are registered and practicing midwifery in another Canadian province/territory. These midwives will be voting members-at-distance of a Transitional College of Midwives and will receive a stipend for their participation. The Canadian Midwifery Regulators Consortium will recruit and select senior individuals who are willing to undertake this work for an interim period. The Transitional College, whose membership can include honorary members, such as representatives of the Association of Midwives of Newfoundland and Labrador, will carry out the mandated functions of the College (e.g. entry to practice requirements, scope of practice, standards of practice, renewal of registration requirements). The Transitional College will become the (permanent) College of Midwives when the members-at-distance can be replaced by registered midwives practicing within Newfoundland and Labrador.

9. We recommend that the Transitional College of Midwives take the following actions:

9.1 Recognize three categories of midwives eligible for registration.

A midwife registered in another province or territory who is in good standing with the regulatory body in that jurisdiction and who intends to have or has residence in Newfoundland and Labrador;

A graduate of a recognized program of midwifery education in Canada who has successfully passed the national examination and who intends to have or has residence in Newfoundland and Labrador;

A midwife from a jurisdiction outside Canada who has successfully completed a recognized assessment and skills improvement/bridging program and has successfully passed the national examination and who intends to have or has residence in Newfoundland and Labrador.

9.2 Approve the program of assessment and skills to be developed within Newfoundland and Labrador as a one-time offering. (See Recommendation 7)

9.3 Develop a broad scope of practice that includes skilled assessments of at risk newborns, aspects of well woman health assessments, pre-conception advice and well-baby care to 1 year. A requirement for continuing education is to include completion of a program such as Acute Care of at Risk Newborns (ACoRN)[61] or S.T.A.B.L.E. that focuses on post resuscitation and pre-transport of ill newborns.[62]

Include also in the scope of practice the possibility for individuals to add advanced skills that are especially suited to remote locations, such as first assist at operative births, emergency evacuation of products of conception in situations of early pregnancy hemorrhage, vacuum assisted birth for emergency fetal concerns; such skills to be recognized when individuals obtain suitable preparation. Programs such as Advances in Labour and Risk Management (ALARM)[63] or Advanced Life Support in Obstetrics (ALSO)[64] that cover emergency obstetric problems are examples of recognized offerings.

9.4 Design the regulations about prescriptive authority and procurement of laboratory tests by category of drug or lab test rather than including specific medications or specific tests in the regulation. The latter approach may prove difficult to amend when change is needed. Practice policies and guidelines can set out detailed approved lists and are amenable to rapid alteration.

9.5 Develop criteria for renewal of registration that reflect professional competence. Avoid defining competence exclusively as attendance at a specified number of births in specified locations.

9.6 Neither mandate nor prohibit home birth as a condition of practice or ongoing registration but rather focus on policies/standards that promote safe care. Practice sites will need flexibility to determine interest in home birth and to define protocols suited to varying locations.

9.7 Define the qualifications for second attendants at home births; do not require that two midwives attend hospital or home births. Midwives should work collaboratively with nurses, respiratory therapists , or others who attend at births. There is no evidence to support a requirement for two *midwives* to be present, although two *persons* with appropriate qualifications should always attend home births.

9.8 Require that midwives participate in regular interprofessional risk management/quality assurance activities. These activities should focus on primary maternity care, where current research, best practices and protocols for local practice are discussed. Managing Obstetrical Risk Efficiently (MORE^{OB}) is an example of a suitable program.[65]

10.0 **We recommend to the government of Newfoundland and Labrador** that consideration be given to establishing contractual agreements with one or more of the seven universities in Canada that offer Midwifery Education to **support a small number of designated places for future students from the province.**

9.0 Conclusion

The implementation of midwifery in Newfoundland and Labrador will contribute to goals of improved health status of mothers and infants and optimal utilization of health human resources. Many of the challenges that will arise when midwives are introduced into the existing health system will not be unique to the specific locations or even to midwifery itself. Maternity units across this country and elsewhere struggle with issues about how to forge productive collaborative environments. The implementation of midwifery creates changes in the maternity care system, changes that can promote and strengthen the entire system for the benefit of childbearing women. We hope the recommendations in this report might assist that effort.

References

1. World Health Organization. http://www.who.int/topics/midwifery/en/

2. International Confederation of Midwives. http://www.internationalmidwives.org/who-we-are/policy-and-practice/icm-international-definition-of-the-midwife/

3. Canadian Midwifery Regulators Consortium. http://www.cmrc-ccosf.ca

4. Newfoundland and Labrador Center for Health Information. Number and Rate of Live Births (per 1000 population) by Regional Health Authority, Newfoundland and Labrador, 2008-2012. Report provided by Research and Evaluation Department, Newfoundland and Labrador Centre for Health Information. August 2013.

5. Statistics Canada. http://www.stats.gov.nl.ca/Statistics/Population/PDF

6. Newfoundland and Labrador Center for Health Information. Number of Live Births by Specified Hospital Facility, Newfoundland and Labrador, 2008-2012. Report provided by Research and Evaluation Department, Newfoundland and Labrador Centre for Health Information. August 2013.

7. Newfoundland and Labrador Center for Health Information. Number of Live Births by Mother's Age and Age-Specific Fertility Rates, Province and Regional Health Authorities. Live Birth System. Centre for Health Information 2006-2010. http://www.nlchi.nl.ca/images/PDFs/Live%20Birth%20Trends%20%202006-2010%20Dec%205%202011.pdf

8. Kornelsen J, Grzybowski S. (2005) The Costs of Separation. The Birth Experiences of Women in Isolated and Remote Communities in British Columbia. Canadian Women's Studies. 24(1):75-80.

9. Kornelsen J, Grzybowski S. (2005) Safety and Community: The Maternity Care Needs of Rural Parturient Women. J Obstet Gynaecol Can. 27(6):247-254.

10. Van Wagner V, Epoo B, Nastapoka J, Harney E. (2007) Reclaiming Birth, Health, and Community: Midwifery in the Inuit Villages of Nunavik, Canada. J Midwifery Women's Health. 52:384–391.

11. Pittman T. (2012) Advocating for the professional recognition, legislation and regulation of midwifery in Newfoundland and Labrador: Voices and experiences from Labrador's

Aboriginal consumers and community midwives. Unpublished student paper submitted to Ryerson University in partial fulfillment of course requirements.

12. Wilson D, de la Ronde S, Brascoupé S, Apale AN, Barney L, Guthrie B et al. (2013) Health professionals working with First Nations, Inuit, and Métis consensus guideline. SOGC Clinical Practice Guideline No. 293. J Obstet Gynaecol Can. 35(6):550-8.
13. Association of Midwives of Newfoundland and Labrador. http://www.ucs.mun.ca/~pherbert/number7.html
14. College of Physicians and Surgeons of Newfoundland and Labrador. http://www.cpsnl.ca
15. National Physician Survey. http://nationalphysiciansurvey.ca/wp-content/uploads/2012/09/2010-ProvNLFP-Q15.pdf
16. Canadian Institute for Health Information. Highlights of 2011-2012. Selected Indicators Describing the Birthing Process in Canada. https://secure.cihi.ca/free_products/Childbirth_Highlights_2011-12_EN.pdf
17. Guise JM, Eden K, Emeis C, Denman M, Marshall N, Fu RR. et al. (2010) Vaginal Birth After Cesarean Section: New Insights. Evid Rep Technol Assess. 191:1-397.
18. Martel MJ, MacKinnon CJ. (2004) Guidelines for vaginal birth after previous caesarean birth. SOGC Clinical Practice Guideline No 147. http://sogc.org/wp-content/uploads/2013/01/147E-CPG-July2004.pdf12.
19. Ministry of Health and Long-Term Care Ontario Midwifery Program, Midwifery Outcomes Report, 2010-2011.
20. Janssen P, Ryan E, Etches D, Klein M, Reime B. (2007) Outcomes of planned hospital birth attended by midwives compared with physicians in British Columbia. Birth. 34(2):140-147. doi: 10.1111/j.1523-536X.2007.00160.x.
21. Karlstrom A, Lindgren H, Hildingsson I. (2013) Maternal and infant outcomes after caesarean section without recorded medical indication: findings from a Swedish case-control study. BJOG. 120(4):479-86.
22. Li H, Ye R, Pei L, Ren A, Zheng X, Liu J. (2013) Caesarean delivery, caesarean delivery on maternal request and childhood overweight: a Chinese birth cohort study of 181 380 children. Pediatr Obes. 2013 Mar 19. Doi:1-1111/j.2047-6310.2013.00151.x. [Epub ahead of print]

23. Dahlen H, Kennedy H, Anderson C, Bell A, Clark A, et al. (2013) The EPIIC hypothesis: Intrapartum effects on the neonatal epigenome and consequent health outcomes. Medical Hypotheses 80:656-662. http://dx.doi.org/10.1016/j.mehy.2013.01.017

24. Statistics Canada. Breastfeeding Practices by Province and Territory (percent) www.statcan.gc.ca/tables-tableaux/sum-som/101/cst01/health92b-eng.htm

25. Newfoundland and Labrador Centre for Health Information. (2012) Fast Facts: Breastfeeding in Newfoundland and Labrador, October 2012.

26. Health Canada. (2012) Nutrition for health term infants: Recommendation from birth to six months. http://www.hc-sc.gc.ca/fn-an/nutrition/infant-nourisson/recom/index-eng.php#a3

27. Critch JN. (2013) Nutrition for healthy term infants, birth to six month: An overview. Pediatr Child Health. 18(4):206-7.

28. Horta B, Bahl R, Martinez J, Victoria C. (2007) Evidence on the long-term effects of breastfeeding: Systematic reviews and meta-analyses. Geneva: World Health Organization, 2007.

29. Ip S, Chung M, Raman G, Chew P, Magula N, Devine D, Trikalinos T, Lau J. (2007) Breastfeeding and maternal and infant health outcomes in developed countries. Evid Rep Technol Assess. 153:1-186.

30. Hatem M, Sandall J, Devane D, Soltani H, Gates S. (2008) Midwife-led versus other models of care for childbearing women. Cochrane Database Syst Rev. (4)(4):CD004667. doi:10.1002/14651858.CD004667.pub2

31. Birthplace in England Collaborative Group. (2011) Perinatal and maternal outcomes by planned place of birth for healthy women with low risk pregnancies: The birthplace in England national prospective cohort study. BMJ. 343:d7400. doi: 10.1136/bmj.d7400.

32. O'Brien B, Chalmers B, Fell D, Heaman M, Darling E, Herbert P. (2011) The Experiences of Pregnancy and Birth with Midwives: Results from the Canadian Maternity Experiences Survey. Birth. 38(3):207-215.

33. Harris SJ, Janssen PA, Saxell L, Carty EA, MacRae GS, Petersen Bed KL. (2012) Effect of a collaborative interdisciplinary maternity care program on perinatal outcomes. CMAJ. 184(17): 1885-1892. doi: 10.1503/cmaj.11753. Epub 2012 Sep 10.

34. Lucas A, McMahon PM, Asling MB, Knobloch A, Kosh E, Sims K. (2013) Assessing child care providers' knowledge and attitudes regarding support of breastfeeding in a region with low breastfeeding prevalence. J Hum Lact. 29(4): 556-63. doi:10.1177/089>334413477259. Epub 2013 Jul 26.

35. Kirk SF, Sim SM, Hemmens E, Price SL. (2012) Lessons learned from the implementation of a provincial breastfeeding policy in Nova Scotia, Canada and the implications for childhood obesity prevention. Int J Environ Res Public Health. 9(4):1308-18.

36. http://www.canadianmidwives.org/61-news/July-08-2013-PRESS-RELEASE-CAM-ACSF.html

37. Hanson L, Mpofu D, Hopkins L. (2013) Toward Equity in Access to Midwifery: A Scan of Five Canadian Provinces. Canad J Midwifery Res and Practice. 12(2):8-18.

38. Canadian Competencies for Midwives. http://cmrc-ccosf.ca/files/pdf/National_Competencies_ENG.pdf

39. Hutton EK. Unpublished analysis of Ontario Midwifery Program data 2006-2009.

40. Malott A, Kaufman K, Thorpe J, Saxell L, Becker G, et al. (2012) Models of Organization of Maternity Care by Midwives in Canada. J Obstet Gynaecol Can. 34(10):961-970.

41. http://www.gov.ns.ca/dhw/publications/Midwifery-in-Nova-Scotia-Report.pdf

42. Canadian Health Services Foundation. (2006), Allow midwives to participate as full members of the healthcare team. http://www.aom.on.ca/files/Communications/Reports_and_Studies/EvidenceBoost_June_E.pdf

43. www.thecochranelibrary.com

44. Sandall J, Soltani H, Gates S, Shennen A, Devane D. (2013) Midwife-led continuity models versus other models of care for childbearing women. Cochrane Database Syst Rev. DOI: 10.1002/14651858.CD004667.pub3

45. de Jonge A, van der Goes B, Ravelli A, Amelink-Verburg M, Mol B, et. al (2009) Perinatal mortality and morbidity in a nationwide cohort of 529 688 low-risk planned home and hospital births. BJOG. 116: 1177–1184. doi: 10.1111/j.1471-0528.2009.02175.x

46. Janssen P, Saxell L, Page L, Klein M, Liston R, Lee S. (2009) Outcomes of planned home birth with registered midwife versus planned hospital birth with midwife or physician. CMAJ. 181(6-7):377-383. doi: 10.1503/cmaj.081869.

47. Hutton E, Reitsma A, Kaufman K. (2009) Outcomes associated with planned home and planned hospital births in low-risk women attended by midwives in Ontario, Canada, 2003-2006: A retrospective cohort study. Birth. 36(3):180-189. doi: 10.1111/j.1523-536X.2009.00322.x.

48. Public Health Agency of Canada (2009) What Mothers Say: Maternity Experiences Survey. Available from http://www.phac-aspc.gc.ca/rhs-ssg/survey-eng.php

49. Van Wagner V, Osepchook C, Harney E, Crosbie C and Tulugak M. (2012) Remote Midwifery in Nunavik, Québec, Canada: Outcomes of Perinatal Care for the Inuulitsivik Health Centre, 2000–2007. Birth. 39(3):230–237.

50. Canadian Institute for Health Information. (2006) Giving Birth in Canada: The Costs. https://secure.cihi.ca/free_products/Costs_Report_06_Eng.pdf

51. Schroeder E, Petrou S, Patel N, Hollowell J, Puddicombe D, et al. (2012) Cost effectiveness of alternative planned places of birth in woman at low risk of complications: evidence from the Birthplace in England national prospective cohort study. BMJ. 344:e2292 doi: http://dx.doi.org/10.1136/bmj.e2292 (Published 19 April 2012)

52. O'Brien B, Harvey S, Sommerfeldt S, Beischel S, Newburn-Cook C, et al. (2010) Comparison of costs and associated outcomes between women choosing newly integrated autonomous midwifery care and matched controls: a pilot study. J Obstet Gynaecol Can. 32(7):650-6.

53. Sandall J. (2012) Every Woman Needs a Midwife, and Some Women Need a Doctor Too. Birth. 39(4):323-326.

54. Slaney Brown, E. (2007) Labours of Love; Midwives of Newfoundland and Labrador. St John's: DRC Publishing.

55. Health Professions Act http://www.assembly.nl.ca/Legislation/sr/statutes/h01-02.htm#29

56. Canadian Nurses Association http://www2.cna-aiic.ca/CNA/documents/pdf/publications/Joint_PS_Nurses_Midwives_e.pdf

57. Society of Obstetricians and Gynecologists of Canada. Policy Statement on Midwifery. Policy Statement #227. July 2009. Accessed from http://sogc.org

58. South Community Birth Program, Vancouver BC. http://scbp.ca/

59. International Midwifery Pre-registration Program http://ce-online.ryerson.ca/ce/default.aspx?id=2161

60. Multijurisdictional Midwifery Bridging Program http://cmrc-ccosf.ca/node/213

61. ACoRN Program http://www.acornprogram.net/doc/Overview.pdf

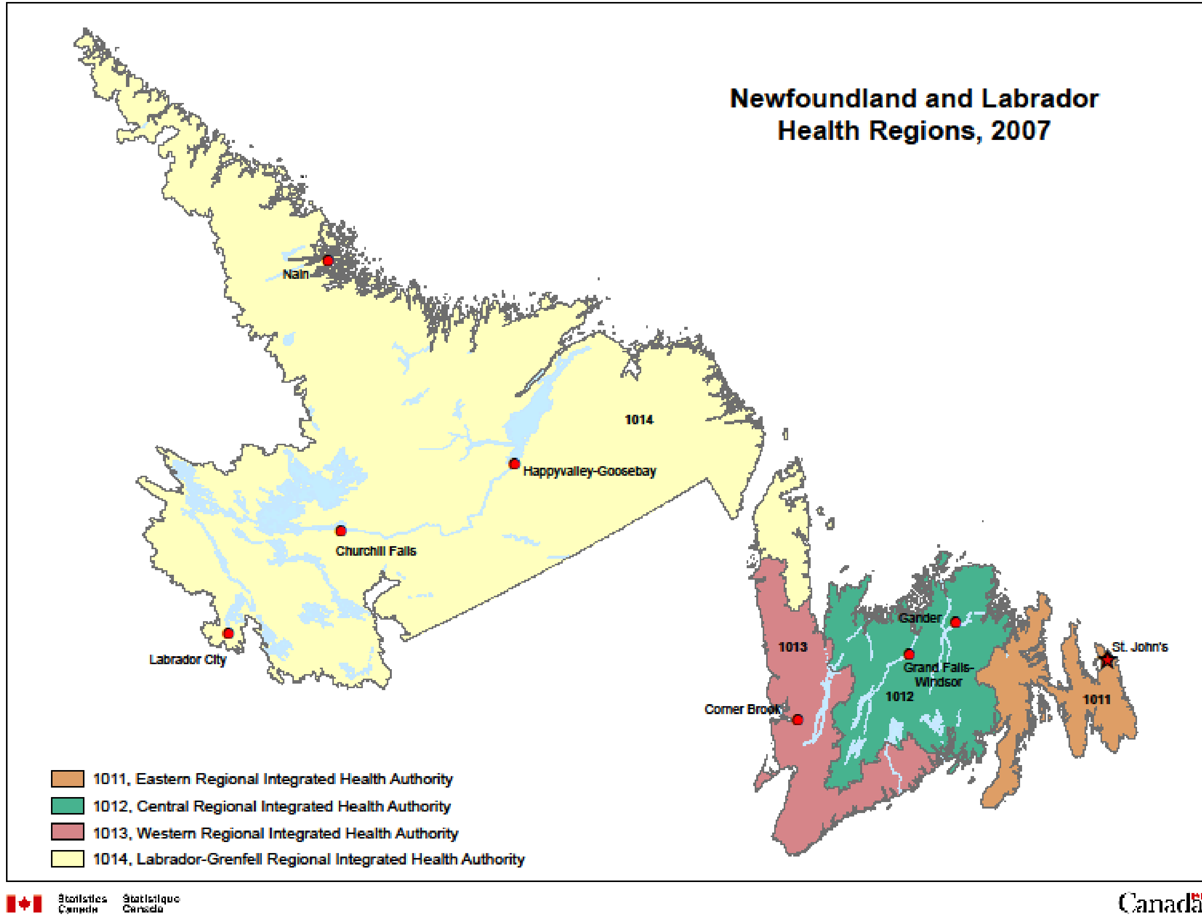
62. S.T.A.B.L.E. Program http://www.stableprogram.org/

63. ALARM Program http://sogc.org/events/advances-in-labour-and-risk-management/welcome/

64. ALSO Program http://www.cfpc.ca/also/

65. MORE^{OB} Program http://www.moreob.com

Appendix A



Appendix B
Abstracts of Selected Publications

I. Evaluations of Midwifery Care

Hatem M, Sandall J, Devane D, Soltani H, Gates S. (2008) Midwife-led versus other models of care for childbearing women. Cochrane Database Syst Rev. 2008 Oct 8;(4):CD004667. doi: 10.1002/14651858.CD004667.pub2.

BACKGROUND:
Midwives are primary providers of care for childbearing women around the world. However, there is a lack of synthesised information to establish whether there are differences in morbidity and mortality, effectiveness and psychosocial outcomes between midwife-led and other models of care.
OBJECTIVES:
To compare midwife-led models of care with other models of care for childbearing women and their infants.
MAIN RESULTS:
We included 11 trials (12,276 women). Women who had midwife-led models of care were less likely to experience antenatal hospitalisation, risk ratio (RR) 0.90, 95% confidence interval (CI) 0.81 to 0.99), the use of regional analgesia (RR 0.81, 95% CI 0.73 to 0.91), episiotomy (RR 0.82, 95% CI 0.77 to 0.88), and instrumental delivery (RR 0.86, 95% CI 0.78 to 0.96) and were more likely to experience no intrapartum analgesia/anaesthesia (RR 1.16, 95% CI 1.05 to 1.29), spontaneous vaginal birth (RR 1.04, 95% CI 1.02 to 1.06), to feel in control during labour and childbirth (RR 1.74, 95% CI 1.32 to 2.30), attendance at birth by a known midwife (RR 7.84, 95% CI 4.15 to 14.81) and initiate breastfeeding (RR 1.35, 95% CI 1.03 to 1.76). In addition, women who were randomised to receive midwife-led care were less likely to experience fetal loss before 24 weeks' gestation (RR 0.79, 95% CI 0.65 to 0.97), and their babies were more likely to have a shorter length of hospital stay (mean difference -2.00, 95% CI -2.15 to -1.85). There were no statistically significant differences between groups for overall fetal loss/neonatal death (RR 0.83, 95% CI 0.70 to 1.00), or fetal loss/neonatal death of at least 24 weeks (RR 1.01, 95% CI 0.67 to 1.53).
AUTHORS' CONCLUSIONS:
All women should be offered midwife-led models of care and women should be encouraged to ask for this option.

Sandall J, Soltani H, Gates S, Shennan A, Devane D. (2013) Midwife-led continuity models versus other models of care for childbearing women. Cochrane Database Syst Rev. 2013 Aug 21;8:CD004667. doi: 10.1002/14651858.<D004667.pub3

BACKGROUND:
Midwives are primary providers of care for childbearing women around the world. However,

there is a lack of synthesised information to establish whether there are differences in morbidity and mortality, effectiveness and psychosocial outcomes between midwife-led continuity models and other models of care.
OBJECTIVES:
To compare midwife-led continuity models of care with other models of care for childbearing women and their infants.
MAIN RESULTS:
We included 13 trials involving 16,242 women. Women who had midwife-led continuity models of care were less likely to experience regional analgesia (average risk ratio (RR) 0.83, 95% confidence interval (CI) 0.76 to 0.90), episiotomy (average RR 0.84, 95% CI 0.76 to 0.92), and instrumental birth (average RR 0.88, 95% CI 0.81 to 0.96), and were more likely to experience no intrapartum analgesia/anaesthesia (average RR 1.16, 95% CI 1.04 to 1.31), spontaneous vaginal birth (average RR 1.05, 95% CI 1.03 to 1.08), attendance at birth by a known midwife (average RR 7.83, 95% CI 4.15 to 14.80), and a longer mean length of labour (hours) (mean difference (hours) 0.50, 95% CI 0.27 to 0.74). There were no differences between groups for caesarean births (average RR 0.93, 95% CI 0.84 to 1.02).Women who were randomised to receive midwife-led continuity models of care were less likely to experience preterm birth (average RR 0.77, 95% CI 0.62 to 0.94) and fetal loss before 24 weeks' gestation (average RR 0.81, 95% CI 0.66 to 0.99), although there were no differences in fetal loss/neonatal death of at least 24 weeks (average RR 1.00, 95% CI 0.67 to 1.51) or in overall fetal/neonatal death (average RR 0.84, 95% CI 0.71 to 1.00).Due to a lack of consistency in measuring women's satisfaction and assessing the cost of various maternity models, these outcomes were reported narratively. The majority of included studies reported a higher rate of maternal satisfaction in the midwifery-led continuity care model. Similarly there was a trend towards a cost-saving effect for midwife-led continuity care compared to other care models.
AUTHORS' CONCLUSIONS:
Most women should be offered midwife-led continuity models of care and women should be encouraged to ask for this option although caution should be exercised in applying this advice to women with substantial medical or obstetric complications.

de Jonge A, van der Goes B, Ravelli, A, Amelink-Verburg M, Mol B, Nijhuis J. et al (2009) Perinatal mortality and morbidity in a nationwide cohort of 529 688 low-risk planned home and hospital births. BJOG. 116: 1177. doi: 10.1111/j.1471-0528.2009.02175.x

OBJECTIVE:
To compare perinatal mortality and severe perinatal morbidity between planned home and planned hospital births, among low-risk women who started their labour in primary care.
DESIGN:
A nationwide cohort study.
SETTING:
The entire Netherlands.
POPULATION:
A total of 529 688 low-risk women who were in primary midwife-led care at the onset of labour. Of these, 321 307 (60.7%) intended to give birth at home, 163 261 (30.8%) planned to give birth in

hospital and for 45 120 (8.5%), the intended place of birth was unknown.
Methods: Analysis of national perinatal and neonatal registration data, over a period of 7 years. Logistic regression analysis was used to control for differences in baseline characteristics.
MAIN OUTCOME MEASURES:
Intrapartum death, intrapartum and neonatal death within 24 hours after birth, intrapartum and neonatal death within 7 days and neonatal admission to an intensive care unit.
Results: No significant differences were found between planned home and planned hospital birth (adjusted relative risks and 95% confidence intervals: intrapartum death 0.97 (0.69 to 1.37), intrapartum death and neonatal death during the first 24 hours 1.02 (0.77 to 1.36), intrapartum death and neonatal death up to 7 days 1.00 (0.78 to 1.27), admission to neonatal intensive care unit 1.00 (0.86 to 1.16).
CONCLUSIONS:
This study shows that planning a home birth does not increase the risks of perinatal mortality and severe perinatal morbidity among low-risk women, provided the maternity care system facilitates this choice through the availability of well-trained midwives and through a good transportation and referral system.

Birthplace in England Collaborative Group, Brocklehurst P, Hardy P, Hollowell J, Linsell L, Macfarlane A, McCourt C. et al (2011) Perinatal and maternal outcomes by planned place of birth for healthy women with low risk pregnancies: the Birthplace in England national prospective cohort study. BMJ. 2011 Nov 23;343:d7400. doi: 10.1136/bmj.d7400

OBJECTIVE:
To compare perinatal outcomes, maternal outcomes, and interventions in labour by planned place of birth at the start of care in labour for women with low risk pregnancies.
DESIGN:
Prospective cohort study.
SETTING:
England: all NHS trusts providing intrapartum care at home, all freestanding midwifery units, all alongside midwifery units (midwife led units on a hospital site with an obstetric unit), and a stratified random sample of obstetric units.
PARTICIPANTS:
64,538 eligible women with a singleton, term (≥37 weeks gestation), and "booked" pregnancy who gave birth between April 2008 and April 2010. Planned caesarean sections and caesarean sections before the onset of labour and unplanned home births were excluded.
MAIN OUTCOME MEASURE:
A composite primary outcome of perinatal mortality and intrapartum related neonatal morbidities (stillbirth after start of care in labour, early neonatal death, neonatal encephalopathy, meconium aspiration syndrome, brachial plexus injury, fractured humerus, or fractured clavicle) was used to compare outcomes by planned place of birth at the start of care in labour (at home, freestanding midwifery units, alongside midwifery units, and obstetric units).
RESULTS:
There were 250 primary outcome events and an overall weighted incidence of 4.3 per 1000 births (95% CI 3.3 to 5.5). Overall, there were no significant differences in the adjusted odds of the

primary outcome for any of the non-obstetric unit settings compared with obstetric units. For nulliparous women, the odds of the primary outcome were higher for planned home births (adjusted odds ratio 1.75, 95% CI 1.07 to 2.86) but not for either midwifery unit setting. For multiparous women, there were no significant differences in the incidence of the primary outcome by planned place of birth. Interventions during labour were substantially lower in all non-obstetric unit settings. Transfers from non-obstetric unit settings were more frequent for nulliparous women (36% to 45%) than for multiparous women (9% to 13%).
CONCLUSIONS:
The results support a policy of offering healthy women with low risk pregnancies a choice of birth setting. Women planning birth in a midwifery unit and multiparous women planning birth at home experience fewer interventions than those planning birth in an obstetric unit with no impact on perinatal outcomes. For nulliparous women, planned home births also have fewer interventions but have poorer perinatal outcomes.

Janssen P, Ryan E, Etches D, Klein M, Reime B. (2007) Outcomes of Planned Hospital Birth Attended by Midwives Compared with Physicians in British Columbia. Birth. 34(2):140-7.

BACKGROUND:
The impact of midwifery versus physician care on perinatal outcomes in a population of women planning birth in hospital has not yet been explored. We compared maternal and newborn outcomes between women planning hospital birth attended by a midwife versus a physician in British Columbia, Canada.
METHODS:
All women planning a hospital birth attended by a midwife during the 2-year study period who were of sufficiently low-risk status to meet eligibility requirements for home birth as defined by the British Columbia College of Midwives were included in the study group (n =488). The comparison group included women meeting the same eligibility requirements but planning a physician-attended birth in hospitals where midwives also practiced (n =572). Outcomes were ascertained from the British Columbia Reproductive Care Program Perinatal Registry to which all hospitals in the province submit data.
RESULTS:
Adjusted odds ratios for women planning hospital birth attended by a midwife versus a physician were significantly reduced for exposure to cesarean section (OR 0.58, 95% CI 0.39–0.86), narcotic analgesia (OR 0.26, 95% CI 0.18–0.37), electronic fetal monitoring (OR 0.22, 95% CI 0.16–0.30), amniotomy (OR 0.74, 95% CI 0.56–0.98), and episiotomy (OR 0.62, 95% CI 0.42–0.93). The odds of adverse neonatal outcomes were not different between groups, with the exception of reduced use of drugs for resuscitation at birth (OR 0.19, 95% CI 0.04–0.83) in the midwifery group.
CONCLUSIONS:
A shift toward greater proportions of midwife-attended births in hospitals could result in reduced rates of obstetric interventions, with similar rates of neonatal morbidity.

Janssen PA, Saxell L, Page LA, Klein MC, Liston RM, Lee SK. (2009) Outcomes of planned home birth with registered midwife versus planned hospital birth with midwife or physician. CMAJ. 2009 Sep 15;181(6-7):377-83. doi: 10.1503/cmaj.081869. Epub 2009 Aug 31.

BACKGROUND:
Studies of planned home births attended by registered midwives have been limited by incomplete data, nonrepresentative sampling, inadequate statistical power and the inability to exclude unplanned home births. We compared the outcomes of planned home births attended by midwives with those of planned hospital births attended by midwives or physicians.
METHODS:
We included all planned home births attended by registered midwives from Jan. 1, 2000, to Dec. 31, 2004, in British Columbia, Canada (n = 2889), and all planned hospital births meeting the eligibility requirements for home birth that were attended by the same cohort of midwives (n = 4752). We also included a matched sample of physician-attended planned hospital births (n = 5331). The primary outcome measure was perinatal mortality; secondary outcomes were obstetric interventions and adverse maternal and neonatal outcomes.
RESULTS:
The rate of perinatal death per 1000 births was 0.35 (95% confidence interval [CI] 0.00-1.03) in the group of planned home births; the rate in the group of planned hospital births was 0.57 (95% CI 0.00-1.43) among women attended by a midwife and 0.64 (95% CI 0.00-1.56) among those attended by a physician. Women in the planned home-birth group were significantly less likely than those who planned a midwife-attended hospital birth to have obstetric interventions (e.g., electronic fetal monitoring, relative risk [RR] 0.32, 95% CI 0.29-0.36; assisted vaginal delivery, RR 0.41, 95% 0.33-0.52) or adverse maternal outcomes (e.g., third- or fourth-degree perineal tear, RR 0.41, 95% CI 0.28-0.59; postpartum hemorrhage, RR 0.62, 95% CI 0.49-0.77). The findings were similar in the comparison with physician-assisted hospital births. Newborns in the home-birth group were less likely than those in the midwife-attended hospital-birth group to require resuscitation at birth (RR 0.23, 95% CI 0.14-0.37) or oxygen therapy beyond 24 hours (RR 0.37, 95% CI 0.24-0.59). The findings were similar in the comparison with newborns in the physician-assisted hospital births; in addition, newborns in the home-birth group were less likely to have meconium aspiration (RR 0.45, 95% CI 0.21-0.93) and more likely to be admitted to hospital or readmitted if born in hospital (RR 1.39, 95% CI 1.09-1.85).
INTERPRETATION:
Planned home birth attended by a registered midwife was associated with very low and comparable rates of perinatal death and reduced rates of obstetric interventions and other adverse perinatal outcomes.

Hutton EK, Reitsma AH, Kaufman K. (2009) Outcomes associated with planned home and planned hospital births in low-risk women attended by midwives in Ontario, Canada, 2003-2006: a retrospective cohort study. Birth. 2009 Sep;36(3):180-9. doi: 10.1111/j.1523-536X.2009.00322.x.

BACKGROUND:
Midwives in Ontario, Canada, provide care in the home and hospital and are required to submit data for all births to the Ontario Ministry of Health database. The purpose of this study was to compare maternal and perinatal/neonatal mortality and morbidity and intrapartum intervention rates for women attended by Ontario midwives who planned a home birth compared with similar low-risk women who planned a hospital birth between 2003 and 2006.
METHODS:
The database provided outcomes for all women planning a home birth at the onset of labor (n = 6,692) and for a cohort, stratified by parity, of similar low-risk women planning a hospital birth.
RESULTS:
The rate of perinatal and neonatal mortality was very low (1/1,000) for both groups, and no difference was shown between groups in perinatal and neonatal mortality or serious morbidity (2.4% vs 2.8%; relative risk [RR], 95% confidence intervals [CI]: 0.84 [0.68-1.03]). No maternal deaths were reported. All measures of serious maternal morbidity were lower in the planned home birth group as were rates for all interventions including cesarean section (5.2% vs 8.1%; RR [95% CI]: 0.64 [0.56, 0.73]). Nulliparas were less likely to deliver at home, and had higher rates of ambulance transport from home to hospital than multiparas planning home birth and had rates of intervention and outcomes similar to, or lower than, nulliparas planning hospital births.
CONCLUSIONS:
Midwives who were integrated into the health care system with good access to emergency services, consultation, and transfer of care provided care resulting in favorable outcomes for women planning both home or hospital births.

O'Brien B, Chalmers B, Fell D, Heaman M, Darling EK, Herbert P. (2011) The experience of pregnancy and birth with midwives: results from the Canadian maternity experiences survey. Birth. 2011 Sep;38(3):207-15. doi: 10.1111/j.1523-536X.2011.00482.x.

BACKGROUND:
In Canada maternity care is publicly funded, and although women may choose their care providers, choices may be limited. The purpose of this study was to compare perceptions of maternity outcomes and experiences of those who received care from midwives with those who received care from other providers.
METHODS:
Based on the 2006 Canadian census, a random sample of women (n = 6,421) who had recently given birth in Canada completed a computer-assisted telephone interview for the Maternity Experiences Survey. The sample was stratified according to province or territory where birth occurred, age, rural or urban residence, and presence of other children in the home. Those who were 15 years of age and older, gave birth to a singleton baby, and were living with their infant were eligible for inclusion.

RESULTS:
Women whose primary prenatal providers were midwives had fewer ultrasounds and were more likely to attend prenatal classes and have at least five or more prenatal visits. They were also more likely to rate satisfaction with their maternity experience as "very positive" and be satisfied with information provided on a variety of pregnancy and birth topics if their primary prenatal provider was a midwife. They were almost half as likely to experience induction and 7.33 times more likely to experience a medication-free delivery. They were more likely to initiate and maintain breastfeeding at 3 and 6 months.
CONCLUSIONS:
Evidence shows that midwifery outcomes and levels of satisfaction meet or exceed Canadian maternity care standards. Facilitation of the continuing integration of midwives as autonomous practitioners throughout Canada is recommended. (BIRTH 38:3 September 2011).

Harris SJ, Janssen PA, Saxell L, Carty EA, MacRae GS, Petersen KL. (2012) Effect of a collaborative interdisciplinary maternity care program on perinatal outcomes. CMAJ. 2012 Nov 20;184(17):1885-92. doi: 10.1503/cmaj.111753. Epub 2012 Sep 10.

BACKGROUND:
The number of physicians providing maternity care in Canada is decreasing, and the rate of cesarean delivery is increasing. We evaluated the effect on perinatal outcomes of an interdisciplinary program designed to promote physiologic birth and encourage active involvement of women and their families in maternity care.
METHODS:
We conducted a retrospective cohort study involving 1238 women who attended the South Community Birth Program in Vancouver, Canada, from April 2004 to October 2010. The program offers comprehensive, collaborative, interdisciplinary care from family physicians, midwives, community health nurses and doulas to a multiethnic, low-income population. A comparison group, matched for neighbourhood of residence, maternal age, parity and gestational age at delivery, comprised 1238 women receiving standard care in community-based family physician, obstetrician and midwife practices. The primary outcome was the proportion of women who underwent cesarean delivery.
RESULTS:
Compared with women receiving standard care, those in the birth program were more likely to be delivered by a midwife (41.9% v. 7.4%, $p < 0.001$) instead of an obstetrician (35.5% v. 69.6%, $p < 0.001$). The program participants were less likely than the matched controls to undergo cesarean delivery (relative risk [RR] 0.76, 95% confidence interval [CI] 0.68-0.84) and, among those with a previous cesarean delivery, more likely to plan a vaginal birth (RR 3.22, 95% CI 2.25-4.62). Length of stay in hospital was shorter in the program group for both the mothers (mean ± standard deviation 50.6 ± 47.1 v. 72.7 ± 66.7 h, $p < 0.001$) and the newborns (47.5 ± 92.6 v. 70.6 ± 126.7 h, $p < 0.001$). Women in the birth program were more likely than the matched controls to be breastfeeding exclusively at discharge (RR 2.10, 95% CI 1.85-2.39).

INTERPRETATION:
Women attending a collaborative program of interdisciplinary maternity care were less likely to have a cesarean delivery, had shorter hospital stays on average and were more likely to breastfeed exclusively than women receiving standard care.

Van Wagner V, Osepchook C, Harney E, Crosbie C, Tulugak M. (2012) Remote midwifery in Nunavik, Québec, Canada: outcomes of perinatal care for the Inuulitsivik health centre, 2000-2007. Birth. 2012;39(3): 220-227.

BACKGROUND:
The Inuulitsivik midwifery service is a community-based, Inuit-led initiative serving the Hudson coast of the Nunavik region of northern Québec. This study of outcomes for the Inuulitsivik birth centers, aims to improve understanding of maternity services in remote communities.
METHODS:
We used a retrospective review of perinatal outcome data collected at each birth at the Inuulitsivik birth centers to examine outcomes for 1,372 labors and 1,382 babies from 2000 to 2007. Data were incomplete for some indicators, particularly for transfers to Montreal.
RESULTS:
Findings revealed low rates of intervention with safe outcomes in this young, largely multiparous "all risk" Inuit population. Ninety-seven percent of births were documented as spontaneous vaginal deliveries, and 85 percent of births were attended by midwives. Eighty-six percent of the labors occurred in Nunavik, whereas 13.7 percent occurred outside Nunavik. The preterm birth rate was found to be 10.6 percent. Postpartum hemorrhage was documented in 15.4 percent of women; of these cases, 6.9 percent had blood loss greater than 1,000 mL. Four fetal deaths (2.9 per 1,000) and five neonatal deaths (< 3.6 per 1,000) were documented. Nine percent (9%) of births involved urgent transfers of mother or baby. The most common reasons for medical evacuation were preterm labor and preeclampsia, and preterm birth was the most common reason for urgent neonatal transfer.
CONCLUSIONS:
The success of the Innulitsivik midwifery service rests on the knowledge and skills of the Inuit midwives, and support of an interprofessional health team. Our study points to the potential for safe, culturally competent local care in remote communities without cesarean section capacity. Our findings support recommendations for integration of midwifery services and Aboriginal midwifery education programs in remote communities.

II. Costs of Midwifery Care

Schroeder E, Petrou S, Patel N, Hollowell J, Puddicombe D, Redshaw M, Brocklehurst P; Birthplace in England Collaborative Group. (2012) Cost effectiveness of alternative planned places of birth in woman at low risk of complications: evidence from the Birthplace in England national prospective cohort study. BMJ. 2012 Apr 18;344:e2292. doi: 10.1136/bmj.e2292.

OBJECTIVES:
To estimate the cost effectiveness of alternative planned places of birth.

DESIGN:
Economic evaluation with individual level data from the Birthplace national prospective cohort study.
SETTING:
142 of 147 trusts providing home birth services, 53 of 56 freestanding midwifery units, 43 of 51 alongside midwifery units, and a random sample of 36 of 180 obstetric units, stratified by unit size and geographical region, in England, over varying periods of time within the study period 1 April 2008 to 30 April 2010.
PARTICIPANTS:
64,538 women at low risk of complications before the onset of labour.
INTERVENTIONS:
Planned birth in four alternative settings: at home, in freestanding midwifery units, in alongside midwifery units, and in obstetric units.
MAIN OUTCOME MEASURES:
Incremental cost per adverse perinatal outcome avoided, adverse maternal morbidity avoided, and additional normal birth. The non-parametric bootstrap method was used to generate net monetary benefits and construct cost effectiveness acceptability curves at alternative thresholds for cost effectiveness.
RESULTS:
The total unadjusted mean costs were £1066, £1435, £1461, and £1631 for births planned at home, in freestanding midwifery units, in alongside midwifery units, and in obstetric units, respectively (equivalent to about €1274, $1701; €1715, $2290; €1747, $2332; and €1950, $2603). Overall, and for multiparous women, planned birth at home generated the greatest mean net benefit with a 100% probability of being the optimal setting across all thresholds of cost effectiveness when perinatal outcomes were considered. There was, however, an increased incidence of adverse perinatal outcome associated with planned birth at home in nulliparous low risk women, resulting in the probability of it being the most cost effective option at a cost effectiveness threshold of £20 000 declining to 0.63. With regards to maternal outcomes in nulliparous and multiparous women, planned birth at home generated the greatest mean net benefit with a 100% probability of being the optimal setting across all thresholds of cost effectiveness.
CONCLUSIONS:
For multiparous women at low risk of complications, planned birth at home was the most cost effective option. For nulliparous low risk women, planned birth at home is still likely to be the most cost effective option but is associated with an increase in adverse perinatal outcomes

O'Brien B, Harvey S, Sommerfeldt S, Beischel S, Newburn-Cook C, Schopflocher D. (2010) Comparison of costs and associated outcomes between women choosing newly integrated autonomous midwifery care and matched controls: a pilot study. J Obstet Gynaecol Can. 2010 Jul;32(7):650-6.

OBJECTIVE:
In response to consumer demand and a critical shortage of Canadian maternity care providers, provinces have integrated or are in the process of integrating midwives into their health care

systems. We compared the costs and outcomes of newly integrated, autonomous midwifery care with existing health care services in the province of Alberta.
METHODS:
Alberta Health and Wellness cost data from (1) physician fee-for-service, (2) outpatient, and (3) inpatient records, as well as outcome data from vital statistics records, were compared between participants in a midwifery integration project and individually matched women who received standard perinatal care during the same time period. Records of births occurring within the same time frame were matched according to risk score, maternal age, parity, and postal code.
RESULTS:
For women who chose midwifery care, an average saving of $1172 per course of care was realized without adversely affecting maternal or neonatal outcomes. Cost reductions are partially realized through provision of out-of-hospital health services. Women who chose midwifery care had more prenatal visits ($P < 0.01$) and fewer inductions of labour ($P < 0.01$); their babies had greater gestational ages ($P < 0.05$) and higher birth weights ($P < 0.05$) than controls. The sample size was insufficient to compare events associated with extremely high costs, or rare or catastrophic outcomes.
CONCLUSION:
Regulated and publicly funded midwifery care appears to be an effective intervention for low-risk women who make this choice. When compared with existing care, autonomous care by newly integrated midwives does not increase health care costs.

III. Other references of interest

Van Wagner V, Epoo B, Nastapoka J, Harney E. (2007) Reclaiming Birth, Health, and Community: Midwifery in the Inuit Villages of Nunavik, Canada*.* J Midwifery Women's Health 2007;52:384–391.

This article describes the Inuulitsivik midwifery service and education program, an internationally recognized approach to returning childbirth to the remote Hudson coast communities of Nunavik, the Inuit region of Quebec, Canada. The service is seen as a model of community-based education of Aboriginal midwives, integrating both traditional and modern approaches to care and education. Developed in response to criticisms of the policy of evacuating women from the region in order to give birth in hospitals in southern Canada, the midwifery service is integrally linked to community development, cultural revival, and healing from the impacts of colonization. The midwifery-led collaborative model of care involves effective teamwork between midwives, physicians, and nurses working in the remote villages and at the regional and tertiary referral centers. Evaluative research has shown improved outcomes for this approach to returning birth to remote communities, and this article reports on recent data. Despite regional recognition and wide acknowledgement of their success in developing and sustaining a model for remote maternity care and Aboriginal education for the past 20 years, the Nunavik midwives have not achieved formal recognition of their graduates under the Quebec Midwifery Act.

Dahlen H, Kennedy H, Anderson C, Bell A, Clark A, et al. (2013) The EPIIC hypothesis: Intrapartum effects on the neonatal epigenome and consequent health outcomes. Medical Hypotheses. 2013;80:656–662 http://dx.doi.org/10.1016/j.mehy.2013.01.017

There are many published studies about the epigenetic effects of the prenatal and infant periods on health outcomes. However, there is very little knowledge regarding the effects of the intrapartum period (labor and birth) on health and epigenetic remodeling. Although the intrapartum period is relatively short compared to the complete perinatal period, there is emerging evidence that this time frame may be a critical formative phase for the human genome. Given the debates from the National Institutes of Health and World Health Organization regarding routine childbirth procedures, it is essential to establish the state of the science concerning normal intrapartum epigenetic physiology. EPIIC (Epigenetic Impact of Childbirth) is an international, interdisciplinary research collaboration with expertise in the fields of genetics, physiology, developmental biology, epidemiology, medicine, midwifery, and nursing. We hypothesize that events during the intrapartum period – specifically the use of synthetic oxytocin, antibiotics, and caesarean section – affect the epigenetic remodeling processes and subsequent health of the mother and offspring. The rationale for this hypothesis is based on recent evidence and current best practice.

Sandall J. (2012) Every woman needs a midwife, and some women need a doctor too. Birth. 2012 Dec;39(4):323-6. doi: 10.1111/birt.12010. Epub 2012 Nov 5.

Global recognition is increasing of the contribution of midwifery services to optimal outcomes for women and babies, and evidence around how to organize services and the roles of maternity providers. However, a sociological analysis can provide some insight into why the role of midwives varies so widely in different countries. Evidence is necessary, but more important is the role of the state in legalizing and financially supporting midwifery practice, how professional boundaries are negotiated in the maternity care domain, and consumer mobilization in support of midwifery and around maternity issues.

Appendix C

Survey to determine interest in midwifery in Newfoundland and Labrador

An online survey was authored by K Kaufman and H McDonald and posted by the Canadian Association of Midwives to its members in April, 2013. The survey was intended to elicit interest only; there was no explicit or implicit understanding that positions would become available or that midwives would undertake moving to Newfoundland and Labrador on the basis of their interest.

Responses to selected survey items are listed below:

Total respondents	**171**
Those with "some interest"	75
Those "very interested"	18
Currently working as registered midwife in Canada	72
Currently living in NL	7
Have life/work experience in NL	24
Planning to move to NL	3
Expressed a preferred working location	18
Prefer working rural/northern	11
Prefer working St John's /Avalon	7
Require refresher/bridging program to practice in NL	7
Views about aspects of midwifery practice	
Highly favour having hospital privileges	97%
Highly favour providing home birth services	91%
Somewhat or highly favour working in interdisciplinary teams	79%
Somewhat or highly favour working in small group of midwives	87%
Somewhat or highly favour having salaried position	58%
Strongest motivation to practice in NL: help establish midwifery in a newly regulated province	72%

Appendix D
Timeline for Implementation

Fiscal Year and Activities

2013-14	2014-15	2015-16	2016-17	2017-18	2018 and beyond
Submission of report with recommendations. Internal review and release of report	Announcement of government intentions Appointment of implementation coordinator for 2-3 year period Coordinator convenes advisory committee Consortium of regulators will seek and select registered midwives to become members of the Transitional College of Midwives; the selected midwives will apply to the Council of Health Professions for registration The members of the Transitional College begin their work Recruit a senior registered midwife in Canada to design and carry out the assessment and upgrading program. Application process is launched to determine eligibility of those who desire an assessment and upgrading program.	Transitional College of Midwives continues their work Assessment and upgrading program carried out Announcement of first practice positions and locations Begin recruitment efforts for midwives wishing to re-locate to Newfoundland and Labrador Register midwives currently located elsewhere who wish to relocate; register in-province midwives who complete requirements NLCHI designs data collection process for midwives that will be used to evaluate outcomes of care	Fill midwifery positions in: St John's (2), St Anthony (3), Happy-Valley Goose Bay (2), one other location (2) Begin phasing out at-distance College of Midwives members if sufficient in-province members	Expand number of funded positions: St John's (1); Other location in Eastern Health (2); Western or Central Health (2)	Continue expanding existing groups and adding new sites to reach 20 FTE positions Conduct evaluation of first 5 years; qualitative assessment of what has gone well and what changes may be needed; quantitative assessment of midwives' care provision and outcomes of care

Appendix E
Schedule of Site Visit Meetings about Midwifery
May 9 – May 15, 2013

THURSDAY, MAY 9, 2013	
9:00 – 10:00 a.m.	Cathie Royle, Program Consultant, Prenatal and Early Child Development Department of Health and Community Services Main Floor, West Block, Confederation Building (Boardroom # 2) *Contact Information:* Phone: 709-729-3280 Email: cathieroyle@gov.nl.ca
10:30 – 11:30 a.m.	Heather Hanrahan, Director of Health Workforce Planning Department of Health and Community Services Main Floor, West Block, Confederation Building (Boardroom # 2) *Contact Information:* Phone: 709-729-2501 Email: HeatherHanrahan@gov.nl.ca
2:00 – 3:45 p.m.	Judith McFetridge-Durdle, Dean of the School of Nursing Memorial University of Newfoundland Room H2926 - Health Sciences Centre Prince Philip Drive Email:j.mcfetridge-durdle@mun.ca *Contact Information:* Phone: 709-777-6972 (Catherine Pinhorn, Administrative Assistant) Email: cpinhorn@mun.ca
4:00 – 6:00 p.m.	Eastern Health Authority Jeanne Robertson, Regional Director, Children's and Women's Health Lorraine Burrage, Program Coordinator, Provincial Perinatal Program Dr. Atam Gill, Clinical Chief of Women's Health April Pomeroy, Division Manager of Labour and Delivery Room 2J141 – Administration Offices at the Janeway *Contact Information:* Phone: 709-777-4418 (Administrative Assistant) Email: Cindy.Howell@easternhealth.ca Paula.Dalley@easternhealth.ca

FRIDAY, MAY 10, 2013	
9:00 – 11:00 a.m.	Rob Ritter, Executive Director and Lynn Barter Newfoundland and Labrador Medical Association 164 MacDonald Drive (Small Boardroom) *Contact Information:* Phone: 709-726-7424 (302) Email: RRitter@nlma.nl.ca
2:00 – 3:00 p.m.	Ken Mullaly, Registrar Vital Statistics Division Service Newfoundland and Labrador 5 Mews Place *Contact Information:* Phone: 709-729-3311 Email: kmullaly@gov.nl.ca
3:00 – 4:00 p.m.	Telephone meeting Geri Bailey, Manager Health Policy and Programs Panktuutit Inuit Women of Canada Ottawa, ON
11:00 a.m. – 1:00 p.m.	Doula Collective and Friends of Midwifery Boardroom #3, Department of Health and Community Services
2:00 – 4:00 p.m.	Provincial Midwifery Association Boardroom #3, Department of Health and Community Services
MONDAY, MAY 13, 2013	
9:00 – 11:00 a.m.	Louise Jones, Registrar Newfoundland and Labrador Council of Health Professionals 510 Topsail Road *Contact Information:* Phone: 709-745-7304 Email: louise.jones@nlchp.ca
12:00 – 1:45 p.m.	Lynn Power, Executive Director Bev McIsaac, Nursing Consultant, Regulatory Services/Advanced Practice Association of Registered Nurses of Newfoundland and Labrador 55 Military Road *Contact Information:* Phone: 709-753-6173 Email: lpower@arnnl.ca
2:00 – 4:00 p.m.	Dr. Robert Young, Registrar College of Physicians and Surgeons of Newfoundland and Labrador 120 Torbay Road, Suite W100

	Contact Information: Phone: 709-726-8546 Email: cpsnl@cpsnl.ca
Tuesday, May 14, 2013	
9:00 – 10:00 a.m.	Dr. Larry Alteen, Director of Physician Services Dr. Blair Fleming, Assistant Director of Physician Services Department of Health and Community Services Belvedere Building, 57 Margaret's Place *Contact Information:* Phone: 709-729-3531 / 709-758-1557 Email: LarryAlteen@gov.nl.ca / blairfleming@gov.nl.ca
10:30 – 11:30 a.m.	Dr Bob Miller MUN Family Medicine Dr Bethune's office in the Family Practice Unit Main Floor of the Health Sciences Centre (located near the cafeteria *Contact Information* Phone: 709-777-7795 Email: mrmiller@mun.ca Agnes.whelan@med.mun.ca (Administrative Assistant)
11:30 a.m. – 12:30 p.m.	Tour of Birthing Unit at Health Sciences Centre April Pomeroy, Division Manager
1:30 – 4:30 p.m.	Provincial Perinatal Advisory Committee Eastern health Offices – 20 Cordage Place
Wednesday, May 15, 2013	
9:00 – 10:30 a.m.	(Phone Meeting) Tina Buckle RN. BN. CCHN(c) Community Health Nursing Coordinator Nunatsiavut Government, Dept. of Health and Social Development
10:00 – 11:00 a.m.	Centre for Health Information 70 OèLeary Ave. Kayla Collins and Kerry LaFresne
11:30 a.m. – 2:30 p.m.	HCS Debrief Boardroom #1, Department of Health and Community Services booked all day Vanessa Reddick, Wanda Legge and Karen Stone

Karyn Kaufman, DrPH

Dr Kaufman is Professor Emerita at McMaster University in Hamilton, Ontario. She received an undergraduate nursing degree from the University of Michigan, a Master's degree in maternal and newborn care, including midwifery, from New York Medical College, a doctorate in maternal and child health from the University of North Carolina and an honorary Doctor of Laws from the University of British Columbia. She was a full time faculty member at McMaster from 1974 until 2007. In 1986 she was appointed to the Ontario government's Task Force on the Implementation of Midwifery in Ontario and from 1988-1991 she was Midwifery Coordinator for the Ministry of Health, helping to transform the recommendations of the Task Force into the legislative and policy framework of today's legally recognized midwifery profession.

From its inception in 1993, she was Assistant Dean in the Faculty of Health Sciences and Director of the Midwifery Education Program, a program formed as a consortium of Laurentian, McMaster and Ryerson Universities. Until her retirement in 2007 she also was a practicing midwife in the Hamilton community with hospital appointments at St Joseph's Healthcare and Hamilton Health Sciences.

She has served as a consultant to Canadian provinces and territories concerning midwifery implementation, midwifery education and midwifery practice. Dr Kaufman has been a guest faculty to the Aga Khan University in Karachi, Pakistan and assisted their faculty in establishing the first midwifery degree program. She serves on the editorial board of two professional journals, continues to be involved in thesis committees of master's and doctoral students and participates in assessments of midwifery practice.

Helen McDonald RM, MHSc

Helen McDonald is a midwife working in Hamilton, Ontario. She completed both her nursing and midwifery education in Sydney Australia and obtained a Master's of Health Sciences from McMaster University in Hamilton in 1989. She has been a faculty member in the Midwifery Education Program at McMaster University in Hamilton since 1993 and is presently an Associate Professor in that program.

Since the inception of midwifery in 1994 she has been Head Midwife at Hamilton Health Sciences and St Joseph's Healthcare in Hamilton where there are currently 30 practicing midwives; in this role she has been instrumental in the integration of midwifery especially in the collaborative development of inter-professional policies and protocols and in fostering cross disciplinary relationships.