Maternity Care in Ontario 2006: Emerging Crisis, Emerging Solutions

Ontario Maternity Care Expert Panel

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This report does not necessarily reflect endorsement by the OWHC
or the Ministry of Health and Long-Term Care.

ONTARIO WOMEN'S HEALTH COUNCIL

June 1, 2006

Ms. Jane Pepino
Chair
Ontario Women's Health Council
101 Bloor St. West
5th floor
Toronto ON M5S 2Z7

Dear Ms. Pepino:

Reference: Ontario Maternity Care Expert Panel

The 15 members of the Ontario Maternity Care Expert Panel have great pleasure in submitting our report *Maternity Care in Ontario 2006: Emerging Crisis, Emerging Solutions*. Over the last 18 months the panel has worked diligently with staff to provide a comprehensive overview of the present state of maternity care in the province, identify both what is working well and where problems with access and quality exist. We have engaged a wide variety of representative groups, policy makers and consumers, and made recommendations for a coordinated and realistic maternity care strategy for Ontario.

The document is divided into three major sections 1) the present state of maternity care in Ontario, 2) vision and principles of maternity care in Ontario, and 3) how do we get to a province-wide strategy that integrates all sectors to provide access for childbearing women across Ontario. This strategy emphasizes the education and skills of the right provider at the right time, in an effective and efficient manner that is reviewed regularly by the Ministry of Health and Long-term Care, with reports to all key programs. Our recommendations align with the new ministry vision of stewardship and address how a provincial maternity care strategy would work with Local Health Integration Networks and other partners.

We have examined current peer-reviewed and other literature, completed a hospital survey from over 100 hospital sites across the province, conducted focus groups in Thunder Bay, Guelph, Owen Sound, Hamilton, and Toronto, provided a forum through the OWHC web site to ascertain women's views, and liaised with other provincial maternity care projects – Babies Can't Wait and Integrated Maternity Care for Rural and Remote Communities - and federally with the Multi-disciplinary Collaborative Primary Maternity Care Project (MCP^2). We have also had many opportunities to seek input and present our interim findings to the professional, regulatory and educational bodies involved in maternity care in Ontario. This process has assisted us to identify important issues and engage in developing recommendations which to date reflect broad agreement on the part of the major stakeholders.

We would like to commend the Ministry of Health and Long-term Care and the Ontario Women's Health Council for their support and cooperation with our requests for information on a number of issues including: numbers of maternity care providers,

funding mechanisms, explanations of policies and procedures, and numbers of births and intervention data. Everyone involved treated the panel with utmost respect and this has led to the development of a multiple-layered recommendation document. In particular OMCEP members would like to thank Wendy Katherine, OMCEP Project Manager, for her outstanding contribution, organization, patience, and dedication during the last 18 months. There is no doubt in our minds that this project would not have been possible without her guidance and assistance.

The experience of our panel and our stakeholder consultations has demonstrated that inter-professional collaboration, and leadership by government, will lead to many solutions for present maternity care issues. We feel confident in our recommended approach which identifies a plan for, and priorities of, a future ministry-led Office of Maternal and Newborn Health or similar mechanism to be the hub of this important ongoing work in association with policy-makers, health care providers and childbearing women.

Yours sincerely,

Renato Natale, HBSc, MD, FRCSC, FACOG Jennifer Medves, RN, PhD

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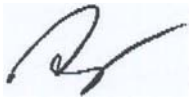

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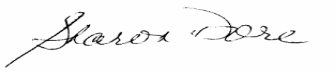

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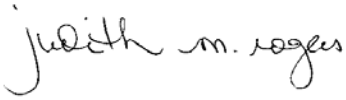

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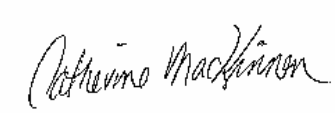

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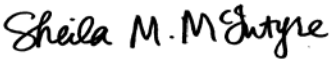

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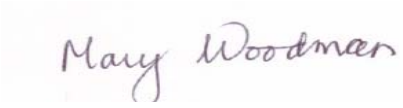

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Definition of Collaboration

collă´bor|āte **As adapted from the Oxford Canadian Dictionary**

(1) Work jointly, esp. at literary or artistic production

(2) Operate traitorously with the enemy

From the outset of our work, 'collaboration' was to be a key theme for the Ontario Maternity Care Expert Panel. We certainly planned for it to typify our internal working relationships and we felt certain that as a Panel we would be researching both team practices and collaborative care practices as potential optimal maternity care models for Ontario's future. We discovered that collaboration at both levels was an interesting, surprising, and even challenging process.

The panel took great satisfaction in considering the nature of collaboration in a setting that involved so many diverse groups: education programs for medicine, midwifery and nursing; midwives (both aboriginal and registered); physicians (including specialties of anaesthesia, family practice, obstetrics and paediatrics/neonatology); professional associations; providers of professional liability protection; registered nurses (including registered practical nurses, public health nurses and nurse practitioners); regulatory bodies; staff from the Ministry of Health and Long-Term Care and maternity care agencies and women using maternity care services.

"One of the successes of the panel is that we have created a place for these discussions. People are now looking for the opinions of other professions." – OMCEP Panel Member

Acknowledgements

The Ontario Maternity Care Expert Panel developed this report with the help of numerous individuals:

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MATERNITY CARE IN ONTARIO 2006:
EMERGING CRISIS, EMERGING SOLUTIONS

Executive Summary

Maternity Care Services in Ontario

The Ontario Women's Health Council created the Ontario Maternity Care Expert Panel in October of 2004 to address concerns about the trends of decreasing accessibility of maternity care services[a], changing trends in service provision and long term sustainability of maternity care in Ontario. Maternity care services are "the foundation for the subsequent health of mothers, babies and their families".[1]

The scope of maternity care services in Ontario includes approximately 40% of all live births in Canada[2] with the number of births expected to rise within the next 20 years from approximately 131,000 births annually in 2003 to 157,000 in 2024.[3] Maternity care is a leading reason for hospital admission.[4] Maternity care services touch virtually every family in every region of Ontario. The success of these services – from pre-conception education to prenatal support to post-natal care – has lifelong implications for the health of neonates as they become adults, for women, and for the lives of their families and communities.[5]

In Ontario, the impact of these services on the health status of our population, the lives and functioning of families, the long-term costs of health services in terms of issues and the overall economic and social health of our society is not routinely measured or evaluated. Ontario's health system spends over one billion dollars a year[b] on maternity care services, yet there have been no province-wide policies or regular reports on access, distribution or effectiveness of these services. There is a general lack of population health policy for the system as a whole, with current policies concentrating on services by individual provider groups only.

Other provinces, including British Columbia, Alberta, Nova Scotia and Prince Edward Island have established provincial strategies to provide a framework for the coordination and delivery of maternity care[6-9] and several provinces have commissioned recent reviews of their maternity care systems in response to evidence citing a maternity care 'crisis'.[10-12] The Society of Obstetricians and Gynaecologists of Canada, among other

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[a] OMCEP uses the terms "maternity care" and "maternal-newborn health services" within this report. Both terms refer to the continuum of care provided to a woman and her newborn(s) from pre-pregnancy to about two months after birth.

[b] This estimate was developed using case costing information to extrapolate the amount spent by hospitals on maternity care. Added to this estimate were budgets for public health maternal and newborn programs, midwifery funding and liability insurance reimbursements for obstetricians, family physicians and midwives. This estimate represents a partial costing only. Blended budgets and an absence of explicit reports for many relevant ministry programs prevented OMCEP from developing a comprehensive inventory of maternal newborn health care expenditures.

national maternity care stakeholders, has also characterized the current state of Canada's maternity care health human resources as 'in crisis'.[13]

The Maternity Care Services Opportunity

The Ontario Maternity Care Expert Panel believes Ontario has an optimum opportunity now to provide the leadership necessary to transform this critical part of the province's health system to provide better and more accessible services to women and infants; to achieve enhanced health outcomes and to contribute to the overall health of our citizens and communities.

The premise upon which this report is based is that the Ontario Ministry of Health must assume that leadership role and work with other ministries to achieve a renewed vision of maternity care. We are calling for the establishment of the *Office of Maternal and Newborn Health* (OMNH) or equivalent mechanism– a Ministry mandated program with the responsibility and authority for establishing and maintaining an overall provincial plan for maternity care services. The OMNH would ensure that the system will be monitored and coordinated at the provincial level, adapting dynamically to the needs of local communities and working closely with Local Health Integration Networks, local and regional care providers, other stakeholders and with the women and families who rely on these services.

The Guiding Principles for Maternity Care Services in Ontario

In the Panel's view, a framework for ongoing maternity care policy is urgently needed. We have developed a simple and encompassing vision to aid in the transformation of Ontario maternity care services.

Every woman in Ontario will have access to high quality, woman and family-centred maternity care as close to home as possible.

We believe that this vision will best be fulfilled if the actions of the Office of Maternal and Newborn Health and of all those engaged in the transformation of Ontario's maternity care services are focused to develop a *specific* maternity care system based on the following guiding principles:

Woman and Family Centred Care

- Care across the continuum of maternity and newborn care
- Equitable access to "Care as Close to Home as Possible"
- Pregnancy and birth as a normal physiological process
- Regional coordination of services and access to high-risk care
- Woman and family centred care including:

- Empowerment and participation
- Informed choice
- Choice of birthplace
- Quality care to diverse and vulnerable populations
- Continuity of care

Principles of Service Provision

- Valuing maternity care providers
- Collaboration – inter-professional, respectful and seamless
- Provider preparation, competence and confidence

Principles of Stewardship and Coordination

- Effective coordination of services
- Maternity care as part of primary care
- Alignment of the system with national and international determinants of health
- Continuous evaluation and improvement to ensure quality and safety
- Financial responsibility and accountability

Overview of the Report

This report describes both the approaches the Panel has taken to researching; understanding the current system, provincial needs and the directions in which we believe Ontario should be moving to fulfill our vision for maternity care in Ontario.

It includes a detailed discussion of a variety of models of care that allow for improved access and comprehensive care in a wide variety of settings. There are recommendations for the required changes in maternity care provider human resources to maintain a sustainable system into the future. It also includes an overview of regulatory, liability and funding issues that will need review and modification on both a provincial and national basis. Lastly it describes the need for, and a model for, provincial stewardship including; planning, co-ordination, data collection and evaluation. Throughout the report is the recognition that, in addition to health care providers, the women and families who access services need to have their voices heard in concrete ways in all levels of planning and evaluation; from the planning of their own care to the planning for the models of care delivery, in the education for the providers and in the strategic planning for the province.

Throughout our deliberations and the preparation of this report, we have consulted widely with stakeholders – including extensive involvement of women and women's representatives, professionals and those involved in the current health care transformations to help ensure that the system that evolves from these initiatives will reflect our guiding principles and result in maternity care services that can make the optimum contribution to the health of women, infants, families and the society as a whole.

A partial list of the publications reviewed (Appendix B), the submissions received (Appendix K), the groups and individuals consulted and the conferences attended throughout the Panel's work (Appendix G) can be found at the end of the report. The

panel created an extensive library of bibliographic references which has become an invaluable tool for the creation of this report and will hopefully continue to provide the backbone for future developments in maternity care in Ontario.

The Panel is grateful for all those who assisted in our deliberations, to the women who shared their stories and to the dedicated professionals who aspire to a vision of an improved maternity care system.

Summary of OMCEP Recommendations:

A complete list of OMCEP recommendations by theme is contained in Appendix A

The Ontario Maternity Care Expert Panel recommends that the Premier of Ontario direct the ministries of Health and Long-Term Care, Children and Youth Services, Health Promotion, Training Colleges and Universities and Attorney General to work with professional organizations, regulatory bodies and educational institutions to take immediate action to address the impending maternal-newborn care crisis and ensure that women and families receive access to essential, high-quality, effective and sustainable maternity care services in Ontario by:

1. Increasing the number of maternity care providers and declaring a moratorium on maternity care program closures in communities that have sufficient health human resources to maintain safe services.

2. Immediately establishing an ongoing provincial maternity care program led by Ministry of Health and Long-Term Care and regional networks of care providers to be responsible for:

    - Creating a sustainable maternal and newborn care plan for Ontario with full financial responsibility and accountability;
    - Integration of that plan across ministries, all regions and services;
    - Alignment of the maternity care plan with the government's transformation plan with maternity care as an integral part of primary care;
    - Ongoing performance measurement to ensure access to quality services.

3. Incorporating women's input into maternity care at all levels from informed decision-making about their own care to local, regional and provincial service planning policy.

4. Ensuring timely and equitable access to quality maternity care by committing to:

    - Primary maternity care delivered close to home;
    - Services that are responsive to the needs of diverse and vulnerable populations;
    - Woman and family-centred models of care;
    - Regionally coordinated access to high-risk care.

5. Create and undertake public and professional education campaigns to support a sustainable maternity care system and promote pregnancy and birth as a normal physiologic process with access to care for complications, as needed.

6. Attract, support and retain maternity care providers by developing a system that values and respects all provider groups, including midwives, nurses and physicians through harmonization of regulation and liability mechanisms and creation of complementary funding schemes.

7. Remove barriers to care and create structures that support:

    - The effective use of all care providers to their full scopes of practice;
    - Collaboration amongst professionals;
    - Innovative inter-professional models of education and clinical care founded on evidence-based guidelines and practices.

1. Multi-disciplinary Collaborative Primary Maternity Care Project. Guidelines for development of a multi-disciplinary collaborative primary maternity care model. Ottawa; 2006 Apr.

2. Statistics Canada.Births, 2003. The Daily; 2005 Jul 12. Available from: http://www.statcan.ca

3. Ministry of Finance Projections, 2004.

4. Canadian Institute for Health Information. Giving birth in Canada: a regional profile, 2004.

5. Mustard JF, McCain MN, Bertrand J. Changing beliefs to change policy: the early years study. ISUMA 2000 Autumn;1(2):76-9.

6. Alberta Perinatal Health Program. Website: http://www.aphp.ca

7. British Columbia Reproductive Care Program. Website: http://www.rcp.gov.bc.ca

8. Reproductive Care Program of Nova Scotia. Website: http://rcp.nshealth.ca

9. Prince Edward Island Reproductive Health Programme. Website: http://www.gov.pe.ca/infopei/onelisting.php3?number=20616

10. A report of Manitoba's working group on maternal/newborn services [in press]. 2005 May.

11. Maternity Care Enhancement Project. Supporting local collaborative models for sustainable maternity care in British Columbia. 2004 Dec.

12. Nova Scotia Department of Health. Report of the Primary Maternity Care Working Group. Halifax; 2005 Jun.

13. Lalonde AB. Access to maternity care [editorial]. JOGC 2005 May;27(5):445-6.

MATERNITY CARE NOW

Pregnancy, birth and newborn are all words that, for most people, evoke positive feelings about the joy and happiness that a new child brings. Unfortunately, for an increasing number of women in Ontario, the words also call to mind the struggles that they face obtaining care, in navigating through a complex health care system and the uncertainty and lack of trust they feel dealing with unknown service providers.

> *"I found out just a couple of weeks before my expected date of delivery that my local hospital, the one I planned to give birth in, was scheduled to close the weekend that I was due…it was very stressful for me not to know where I would end up giving birth – it all depended on when my labour started. There are enough unknowns about an impending birth without the added stress of where the birthplace will be – especially for those of us whose labours tend to be quite short."*
>
> *(Focus group participant - Integrated Maternity Care in Rural and Remote Communities project).*

Maternity care services are "the foundation for the subsequent health of mothers, babies and their families".[1]

The scope of maternity care services in Ontario includes approximately 40% of all live births in Canada[2] with the number of births expected to rise in the next 25 years from approximately 131,000 births annually in 2003 to 157,000.[3] Maternity care is a leading reason for hospital admission.[4] Maternity care services touch virtually every family in every region of Ontario. The success of these services – from pre-conception education to prenatal support to post-natal care – has lifelong implications for the health of neonates as they become adults, for women, and for the lives of their families and communities.[5]

Quick Facts from Ontario

- Maternity care comprises almost a year of services from preconception to 6-8 weeks after the birth for women and newborns
- Cost of maternity care is over $1B annually
- 130,927 babies were born in Ontario is 2003[4]
- Over 100 hospitals provide maternity care (OMCEP Hospital Survey, 2005 – Appendix F)
- 80% of births are in 34% of hospitals (MOHLTC)
- The remaining 66% of hospitals provide care for 20% of births (MOHLTC)
- Approximately 1.4% of babies are born at home each year (1,883 in 2004-05) (MOHLTC, Ontario Midwifery Program)
- Current Caesarean section rate is 26%[4]
- 70-80% of pregnancies are considered low-risk or normal (WHO)
- Approximately 82% of births are attended by obstetricians, 20% by family physicians and 7% by midwives (some births are attended by more than one)[58]
- 5.7% of nurses self identify as providing maternity care (CNO)

In Ontario, the impact of these services on the health status of our population, the lives and functioning of families, the long-term costs of health services in terms of issues and the overall economic and social health of our society is not routinely measured or evaluated. Ontario's health system

spends over one billion dollars a year[c] on maternity care services, yet there have been no province-wide policies or regular reports on access, distribution or effectiveness of these services. There is a general lack of population health policy for the system as a whole, with current policies concentrating on services by individual provider groups only.

Other provinces, including British Columbia, Alberta, Nova Scotia and Prince Edward Island have established provincial strategies to provide a framework for the coordination and delivery of maternity care[6-9] and several provinces have commissioned recent reviews of their maternity care systems in response to evidence citing a maternity care 'crisis'.[10-12] The Society of Obstetricians and Gynecologists of Canada, among other national maternity care stakeholders, has also characterized the current state of Canada's maternity care health human resources as 'in crisis'.[13]

What Do We Mean By Crisis?

As is documented throughout this report and in our bibliography (Appendix B), the term "maternity care crisis" has been used by multiple national and provincial organizations and in professional and public literature to describe concerns about provider shortages, challenges in distribution of services and access to maternity care. Concern about a crisis in maternity care is the basis for this project[14] and for several Primary Health Care Transition Fund projects currently focusing on maternity care due to report in 2006-07.[15-18] International reports document concerns about shortages of maternity care providers and many countries have also done recent reviews of maternity care policy. We reviewed reports from the Netherlands,[19] England,[20] Australia[21] and Scotland.[22]

OMCEP's work showed that in Ontario at the current time providers and institutions have adapted and worked hard to continue to provide a high standard of care. There are limits, however, to the ability of the system to

The Canadian Institute of Health Information reports that Ontario's share of Canada's maternity care system comprises:

- 40% of Canada's births
- 35% of nurses
- 58% of registered midwives*
- 41% of obstetrical specialists
- 34% of family physicians
- 37% of anaesthetists
- 40% of pediatricians
- 50% of nurse practitioners
- 6 of 15 Canadian academic health science centres

[c] This estimate was developed using case costing information to extrapolate the amount spent by hospitals on maternity care. Added to this estimate were budgets for public health maternal and newborn programs, midwifery funding and liability insurance reimbursements for obstetricians, family physicians and midwives. This estimate represents a partial costing only. Blended budgets and an absence of explicit reports for many relevant ministry programs prevented OMCEP from developing a comprehensive inventory of maternal newborn health care expenditures.

* Although initiatives to integrate midwifery are underway in most provinces/territories, only Ontario, British Columbia, Manitoba and Quebec have a funded provincial midwifery system.

compensate – both the experience of panel members and our research indicates an increase in problems that signal a lack of access to care.

Anecdotal examples that were reported include lack of access to early prenatal care; an increase in preventable complications in late pregnancy and birth that are almost unheard of in systems with adequate prenatal care; intermittent or complete lack of access to maternity care in small numbers communities has meant that some women have had to travel unsafe distances and decrease in services to support breastfeeding and postpartum maternal and newborn well being. These issues will be discussed in more detail through out the report.

Our concerns about the challenges facing maternity care in Ontario should not be seen as an argument in favour of private health care. The panel believes firmly that the health of mothers and babies depends on a strong and accessible public system.

In our panel meetings and in meetings with stakeholders, the majority of individuals and organizations were very concerned about deterioration of services, but some may dispute whether we are facing a crisis at all. Some see the trend towards consolidation of services in fewer centres and a decreasing proportion of care provided by family physicians as an appropriate adaptation. Others feel we have underestimated the crisis and that the assumptions we have made do not adequately take into account patterns of retirement, work load preferences of newly graduating and predominantly female care providers, and the decline in services in rural and remote communities – all of which have serious implications for the future capacity of Ontario's maternity care system.

We have suggested some important directions for evolution and change. Change is never a smooth process and we anticipate that there will be concern and some resistance among providers, but we are confident there is strong general support for our recommendations among all provider groups. In his article for the Journal of Obstetrics and Gynaecology of Canada, Sept 2005 SOGC president Michael Hellewa notes, "But the biggest barrier, in my judgment, lies within: we are afraid of change. We must have the courage and confidence to go beyond traditional habits and practices".[23]

The Continuum of Maternity Care Services

Maternity care involves far more than the services provided during labour and childbirth. In fact, maternity care occurs over a period of about one year. It begins with a focus on optimum health in the preconception period and preconception counselling and includes prenatal care, care during labour and birth (or intrapartum care) and services to both the woman and her newborn for six to eight weeks after birth (postpartum and neonatal care).

Currently, local maternity care in Ontario is delivered through an uneven mix of primary care, public health, specialty care, institutional care, community services, and mental health programs. There are often overlaps and gaps in service provision, especially for women who must travel significant distances or overcome barriers to obtain maternity care (OMCEP Focus Groups, 2005 – Appendix G).

Maternity Care Settings

Maternity care services are provided in a range of settings including physicians', midwives' and nurse practitioners' offices, hospitals, public health and community clinics and homes. The stakeholders OMCEP consulted report that, an increasing number of women resort to seeking care in walk-in clinics and emergency rooms without routine screening and regular follow-up (OMCEP Focus Groups, 2005 – Appendix G).

Intrapartum (birth) care is most often provided in one of the approximately 100 hospitals (OMCEP Hospital Survey, 2005 – Appendix F). A survey done by OMCEP of these institutions revealed an increasing number of these institutional services to also be under pressure (OMCEP Hospital Survey, 2005 – Appendix F):

- 5% have had a recent shut down of maternity services with the transfer of funds to other acute care services and the resultant transfer of women and babies to other centres
- 17% are experiencing a decrease in the number of providers for the service
- 70% experience a lack of consistent Caesarean section availability due to provider shortages
- Only 7% are above the provincial goal of >70% full-time nurses[24]
- 26% are experiencing nursing shortages for maternity care

A small minority of births in Ontario (1.4% or 1,883 births in 2004-05) were assisted in the home setting by registered midwives.

Postpartum care is currently also spread across a variety of settings including hospital, clinic and home settings and is provided by obstetricians (for women), paediatricians (for newborns), family physicians, midwives, registered nurses and primary health care nurse practitioners. Our focus groups drew attention to the fact that the lack of availability of family physicians can leave families to seek newborn care at walk-in clinics and emergency rooms. This issue needs further investigation.

"I went to see the doctor twice in "CITY A" in the emergency department. He was very nice to me and told me my due date, arranged an ultrasound and blood work, but he was supposed to get me an appointment at the clinic and I guess he couldn't get it set up"

-From a 17 year old woman who had minimal prenatal care, OMCEP focus group

Fewer Hospitals Providing Maternity Care Services

Over the past 10 years, hospitals across Ontario have tended to consolidate services in a smaller number of sites in an attempt to improve efficiency and reduce costs. It is widely accepted that a well-organized network of high-risk perinatal services can contribute to better outcomes, but our report will outline the ways in which there can also be negative effects on access when low-risk services are consolidated far from where women live. In

some cases, hospitals report that they have closed birthing services or other essential services to balance hospital budgets (OMCEP Hospital Survey, 2005 – Appendix F).

Not all cuts result in hospitals closing their intrapartum units. Rather, some hospitals are opting to maintain birthing services and reduce other elements of care (including dedicated 'maternity' nursing care, lactation support programs, prenatal education, social work and mental health services) that collectively contribute to quality maternity care, shorter hospital stays and better outcomes for women and newborns. Divestment of non-acute maternity care programs by hospitals, without reinvestment in community programs has led to reports of uncoordinated maternity care and gaps in many services (OMCEP Focus Groups, 2005 – Appendix G). Focus group participants expressed concern that lack of access to preventative health programs, such as prenatal education, nutrition and breastfeeding support, is leading to greater pressure on hospitals for preventable acute care population health needs.

Consolidation and access to care issues are not new. In the past, these issues have primarily affected small and rural communities. As early as the 1990s, there was a sharp drop in access to maternity care, particularly in small communities and rural areas.[25,26] By 2002, new closures and limits on the number of women booked to give birth meant that small Ontario hospitals were offering less maternity care.[14] Now, in 2006, intermittent closures are affecting larger centres including: Toronto, Pembroke, Cornwall and Sault Ste. Marie.

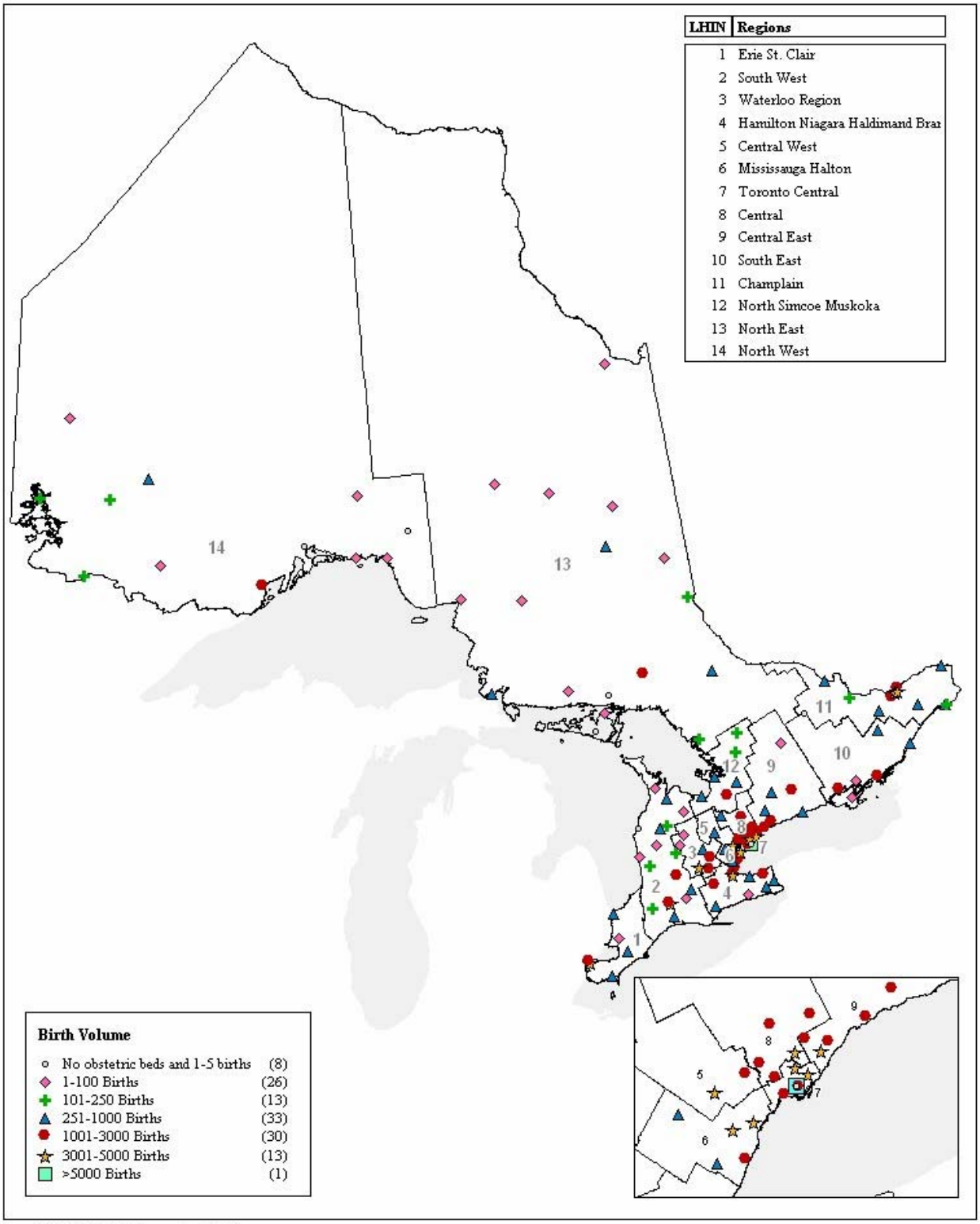
Evidence from Canada and other countries indicates that women who are required to travel for care during pregnancy have increased morbidity.[27-30] Figure 1 illustrates the context of Ontario's vast geography and the large proportion of Ontario hospitals that provide low-volume intrapartum services.

Figure 1

OMCEP developed the following map in August 2005 to show the provincial distribution of births in hospitals and the vast geography, including the most urban and some of the most remote in Canada, across which intrapartum maternity care services are provided. In the absence of a provincial maternity care plan, hospitals decide independently whether to maintain birthing services. The contrast within Ontario between densely urban and extremely remote communities highlights the differing needs of the various regions of our province and the challenges we face to provide access to consistent, quality services. About one third of Ontario's hospitals provide services for about 80% of births in a concentrated geographic region with volumes ranging from 1000- 7000 births per year. The other two-thirds of hospitals provide services to the vast less populated regions of Ontario, most with volumes less than 1000 births per year. About one quarter of hospitals providing intrapartum care in Ontario have volumes of less than 100 births per year.

An annual report including maps like the one above, and others to show access to prenatal care, postpartum care and distribution of professionals could be a valuable tool to assist hospitals, Local Health Integration Networks and the Province to monitor and maintain a provincial maternity care plan for equitable, quality services. Currently, our health system does not maintain ongoing tools like these in Ontario.

Figure 1 - Ontario Hospitals with Intrapartum Services by Birth Volume 2004-05



Source: Ontario Midwifery Program April 2006

Low-Volume Maternity Care – A Safe Model of Care

OMCEP undertook a review of the literature with respect to hospital services in low-volume communities. Like the rest of Canada, Ontario's geography and demographics mean that low-volume maternity care is an important but fragile part of Ontario's health care system.

Almost two-thirds of Canadian hospitals have fewer than 500 births per year and nearly one-third have fewer than 100 births per year.[31] For many years, maternity care has been provided in the majority of these communities by family physicians with the assistance of registered nurses.[32] Some of the larger communities have benefited from the services of obstetricians, often working in ones and twos, possibly with locum relief at the weekends or for holidays only. Increasingly, registered midwives are providing service in some rural communities in Ontario, British Columbia, Alberta, Manitoba, Quebec and the Northwest Territories.

There is evidence to indicate that maintaining maternity service provision in rural and remote communities improves obstetric and neonatal outcomes. Some of the earliest evidence was provided in 1984 by Black and Fyfe's review of perinatal loss rates in Ontario hospitals. They concluded that small hospitals offering Level I services had equivalent or in many cases lower rates of perinatal loss than hospitals providing care for >1000 births per year.[33] A similar conclusion was also drawn by Woollard and Hays in Australia in a study of nearly 6000 rural births compared with 88,000 total births in New South Wales during a one year period in 1990-91.[34] They did, however, raise serious concerns about the birth outcomes in hospitals without any planned maternity services, noting a high proportion of low birth-weight infants, stillbirths and neonatal deaths occurring in small hospitals without obstetric facilities. The risk here appears to be associated, not with the size of the hospital, but with the absence of the full continuum of maternity care services.

> "The fact that some women continue to present to these hospitals in labour is testimony to the determination of some rural women to have their baby near home. In view of the poor obstetric outcomes in these hospitals, the policy of closing smaller units may have to be reconsidered."[34]

More recent evidence from a review of birth outcomes for women delivering in Australian hospitals over a 3-year period demonstrates that lower hospital volume is not associated with adverse outcomes for low-risk women. Hospitals were categorized according to births per year as <100 births, 100-500 births, 501-1000, 1001-2000, and >2000. Neonatal death was less likely in hospitals with less than 2000 births per year regardless of parity. Given appropriate prenatal referral of women with medical and obstetric complications to the larger centres, this is not surprising.[35]

Evidence from New Zealand, B.C., Nova Scotia and the U.S. also supports the safety of local maternity services for low-risk women within a regionalized perinatal system with an efficient intrapartum transfer system.[27,36-38] Concerns have been raised about slightly increased neonatal mortality rates associated with the use of low-volume delivery units

by Moster et al[39] in Norway and Heller et al in Germany.[40] These findings were not supported in a later study by Finnstrom et al of 1.5 million births in Sweden:[41]

> "As expected, the infant mortality at the smallest delivery hospitals was lowest, although not statistically significant, because a certain number of risk mothers are referred before delivery to larger units."[41]

Nesbitt reviewed the birth outcomes of all rural Washington state women in 1986, stratified by low, medium and high-outflow communities. In communities where more than two-thirds of the local women give birth outside of the local community, the perinatal mortality and morbidity statistics worsen for all women from that community, regardless of place of delivery.

> "These women are more likely to have complicated labor and premature deliveries, and their infants are more likely to have longer and more expensive hospital stays than the children of their rural counterparts who deliver in local facilities communities with greater access to care."[27]

Nesbitt also noted an association between high-outflow communities and loss of obstetrical service. While there were 13 high-outflow communities with obstetrical care at the outset of the study, only eight remained at the end of the study period. An additional three of the eight suspended their services in the two years following the study, citing the decision of local physicians to discontinue offering obstetric services. The decline in availability of maternity care services in small communities has been well documented in the Canadian literature.[25,26,42] In addition, concerns have been raised regarding the future of Ontario's obstetric human resources.[14,43-45]

There is wide support for the provision of maternity care for healthy women in their home communities. The Society of Rural Physicians of Canada and Society of Obstetricians and Gynaecologists of Canada's Joint Position Paper on Rural Maternity Care, the B.C. Reproductive Care Program consensus conference, and the Future of Maternity Care in Canada Conference in 2000 have all indicated that there exists a shared goal to support practitioners in providing local maternity care.[46-48] The SOGC supports the provision of health services as close to home as possible for Aboriginal peoples and the training of aboriginal midwives to work in local communities.[49] Klein et al have identified the essential role that maternity services provide in maintaining the economic and functional sustainability of rural communities.[50] Kornelsen and Grzybowski provide some thoughtful recommendations to support the strengthening of local maternity services.[51] Suggestions have been offered in the literature that collaborative practice may be a useful model in low-volume communities[28,52,53] in addition to the variety of creative solutions that have been developed by family physicians and midwives working in rural and remote communities.[54]

Panel members report that there is a growing consensus in Ontario among rural maternity care providers that women should not travel more than 30-60 minutes to a low-risk obstetrical unit. This is based on the need for urgent care for short labours, early

assessment of labour risk when distant from specialty services and consistency with the principle that services are best provided close to home.

Maternity Care Providers

Maternity care is provided by a number of different health professionals based on their regulated scopes of practice and acquired skills, and on each woman's needs and choice. Different professionals, such as public health nurses, primary health care nurse practitioners, midwives, and physicians, can provide services such as prenatal care and postpartum care. Other services, such as deliveries, can only be done by providers who have specialized training, such as family physicians, midwives, and obstetricians. Some highly specialized services, such as operative deliveries can only be performed by physicians, with certain services reserved for obstetrical specialists only.

The specialized skills of the other care providers (referred to above right) make them valuable contributors for a discreet portion of the continuum of care (such as for newborn care) or in certain cases only (such as when transport or anaesthesia are needed), or in a supportive care capacity to families (such as doulas).

Maternity Care Team

Acute Care Nurse Practitioners
Alternative Medicine Providers
Anaesthesia Staff
Doulas
Family Physicians
Lactation Consultants
Midwives
Nurse Practitioners, Primary and Acute Care
Obstetricians
Paediatricians
Perinatal Mental Health Care Providers
Primary Health Care Nurse Practitioners
Public Health Nurses
Respiratory Therapists
Social Workers
Surgeons
Transport Staff

Nurses and Maternity Care

The maternity care system relies heavily on the presence and contribution of nurses, who provide a wide scope of maternity care services throughout the entire continuum of care. Nurses provide care to both mothers and newborns at the vast majority of births in the province as part of a team with either a physician or in some cases, a midwife. They are involved in preconception counselling as primary health care nurse practitioners and as clinical nurse specialists working with genetic screening clinics. They may work with physicians, or alone as primary care nurse practitioners, to provide prenatal assessments and are often employed as prenatal educators. Their role in the hospital labour and delivery units, postpartum units and newborn nurseries is the backbone of a hospital system in which staffing pressures pervade and are amplified due to the unpredictable timing of births.

We know the number of registered nurses who are employed in nursing in Ontario only through the data provided by the College of Nurses of Ontario each year as they register their intention to practice in the following year.[55] In 2004, of the total 86,099 registered nurses who identified that they were employed in nursing, 4,921 identified that they

provided direct care in maternal newborn care. OMCEP could not ascertain how many of these nurses provide intrapartum care vs. working exclusively in neonatal nurseries, postpartum units or other areas of general duty nursing. We could find no data on services provided by nurses to women in the community setting such as prenatal and postpartum care.

The percent of registered nurses who self-identify as providing maternity care has ranged from a high of 6% in 1997 to 5.3% in 2003. A rise is seen in 2004 to 5.7%. Only registered nurses who specified, "direct care maternal newborn" on College of Nurses of Ontario documents were included. This total therefore does not include those who indicated that they work in several clinical areas, which is the case for most rural registered nurses.[55]

The OMCEP Hospital Survey tried to identify how many nurses worked in intrapartum care. The number appeared to have little correlation compared to the number of births in any given unit. There was wide variation between sites of equal size and acuity. Of interest, only 51% of all the maternity care nurses identified in the OMCEP Hospital Survey are working full-time, compared to the overall provincial average of 59%. This is well below the provincial target of 70% full-time employment for nurses in Ontario.

Nurses identify significant barriers to maternity nursing related to employment pressures in the hospital setting. It is difficult for hospitals to recruit and maintain a pool of experienced maternity care nurses when new nurses have had little or no exposure to maternity nursing during their initial education programs. Many hospitals require intensive education courses to be completed either prior to or as a condition of employment, e.g., in fetal surveillance, labour support, and others. Hospitals reported that it can be challenging to maintain certifications for maternity care nurses in the absence of a coordinated regional approach to professional development.

To retain maternity nurses, there need to be opportunities for ongoing education and recognition that maternity nursing requires a specialized skill set. The rapid turnover of nursing staff due to lack of job security in hospitals creates a significant teaching and mentoring burden on experienced maternity care nursing staff in addition to their regular workload (OMCEP Focus Groups, 2005 – Appendix G).

The attractiveness of maternity care nursing as a career option is also affected by the fact that the value of their contribution as part of the maternity care team is not routinely recognized or acknowledged. A prime example of the under-valued role that maternity nurses are accorded is illustrated in Giving Birth in Canada: Providers of Maternity and Infant Care.[56] Nurses' contributions were confined to one paragraph although nurses attend the vast majority of births in Canada.

Nurses are not practising to their full scope in some settings. In other settings, nurses express concerns about maintaining competence, particularly in low volume intrapartum practice. In many small community and rural hospitals maternity nurses are required to work in other areas as well. In birthing hospitals with up to 2,000 births per year (OMCEP Hospital Survey, 2005 – Appendix F), nurses reported working in multiple units. OMCEP focus group nurses reported working in up to four different units.

Research evidence[57] and OMCEP consultations indicate that lack of full-time employment and low case numbers each year contributed to nurses' decisions to seek employment in other sectors of health care. Several managers informed OMCEP

members that an inability to recruit and retain maternity nurses was a constraint to being able to offer maternity services, particularly in small communities.

In the latest Nursing Plan Report from the Ministry of Health and Long-Term Care[58], 73% of Ontario's Registered Nurses were between the ages of 42-48 years and 14% were over 55 years of age. This represents compelling need to consider retention and succession planning strategies for these skilled 'late career' nurses.

Obstetricians and Maternity Care

Obstetrical specialists attend the vast majority of births in Ontario, both for healthy women and women with pregnancy complications, and a larger proportion of births than in any other province in Canada.[56] Obstetricians balance the demands to maintain provision of intrapartum services in hospitals, their own clinic practices and a range of gynaecological services including surgery. In Ontario, approximately 75% of obstetrician-gynaecologists regularly attend births as part of their practice, with the other 25% specializing in other aspects of women's health care. For the last decade, the number of obstetrician-gynaecologists regularly attending births has been relatively stable at slightly under 500.[59]

The shift away from family physicians providing intrapartum maternity care services has affected patterns of practice among Ontario's obstetrical specialists. Obstetricians are responding to shortages of other maternity care providers by increasing the number of women they see and, in areas where recruitment has become more challenging, by increasing the amount of time spent on-call. Between 1999 and 2003, the number of births attended by the average obstetrician increased by 10% from 200 per year to 220.[59] The range in intrapartum activity by obstetricians is wide, with some obstetricians attending 500 births or more in a year, in some cases in solo practice (OMCEP Hospital Survey, 2005 – Appendix F). Without succession planning, the retirement or temporary absence of one obstetrician can result in the suspension or closure of birth services for an entire community. The group of obstetricians providing most of the birthing services in Ontario are between the ages of 45 and 55.[59]

> *"When the OB goes on holiday, women must birth elsewhere."*
>
> *- Participant (Integrated Maternity Care in Rural and Remote Communities project)*

Some see a trend towards younger obstetricians increasingly sub-specializing in areas of obstetrics and gynaecologic practice such as uro-gynaecology, oncology, imaging, fertility and maternal-fetal medicine.[60] Others we consulted with reported challenges recruiting into the sub-specialities. More study is needed to determine the impact of obstetric career choices on provider distribution, prenatal and intrapartum care.

"It's a huge difference whether we take someone on from 28-weeks and look after the third trimester and give them permanent care vs. doing everything from the first prenatal visit to the post partum visit 6-weeks later. And with the number of obstetricians not really increasing in Canada, its going to be a huge burden so its not just deliveries, it's prenatal care as well."

From an Ontario obstetrician, MCP[2] focus group

Family Physicians and Maternity Care

Delivering babies used to be an integral and highly valued part of most family physicians' practice, but that has changed. Over the past 25 years, Ontario has seen a significant drop in the proportion of births attended by family physicians. This is part of a decades-long trend for general and family practitioners – the leading providers of primary health services – to withdraw from intrapartum care, as well as maternal and newborn care.[42,61]

The number of family physicians attending births decreased by 43% from 1,944 in 1992 to 1,105 in 1999.[62] By 2003-04, only 731 or 6.9% of family physicians billed OHIP for more than one birth.[63]

The proportion of total births attended by family physicians has also declined. In 1979-80, family physicians attended 41.2% of Ontario deliveries. By 1988-90, that proportion had dropped to 26.4%;[62] it had dropped to under 15% by 2003-04.[63]. These figures taken from the OHIP database reflect the births for which family physicians were the only care provider who billed. This does not reflect births attended by both family physicians and obstetricians. OMCEP's analysis indicates that if OHIP billing codes P006 plus P009 are considered, the proportion of family physician-attended births is more accurately represented as approximately 20% in Ontario.

Family physicians' declining participation in intrapartum care reflects their desire for more work/life balance, concerns about maintaining their competency in obstetrics, and concerns about liability.[61,64-67] The move away from maternity care is also related to an overall shortage of family physicians in Ontario, increasing demands on their time, and perceptions that some hospitals do not support or value their ongoing involvement in maternity care.[68] Compounding the problem is the fact that family medicine trainees are more and more likely to enter residency training without an interest in intrapartum care.[69] They are exposed to few academic role models who provide full spectrum maternity care and thus, they graduate, without experiencing the richness which maternity care brings to a family practice.

A core group of family physicians continue to make intrapartum care part of their practice. These physicians are currently attending an average of 20 births per year per practitioner.[59] Further studies are required to determine whether family physician withdrawal from intrapartum care is secondarily resulting in withdrawal from prenatal and hospital newborn care.

Midwives and Maternity Care

Since the regulation of the profession of midwifery in 1993, and the establishment of three baccalaureate education programs at Laurentian, McMaster and Ryerson universities and a bridging project for internationally prepared midwives, Ontario has seen a steady increase in the number of registered midwives from 70 in 1994 to 330 in 2006.[70]

During our consultations we found that the scope and model of practice of midwifery is often unfamiliar. Like other health professions, midwives are governed by an autonomous regulatory body, the College of Midwives of Ontario that sets out the profession's scope and maintains standards of practice.[71]

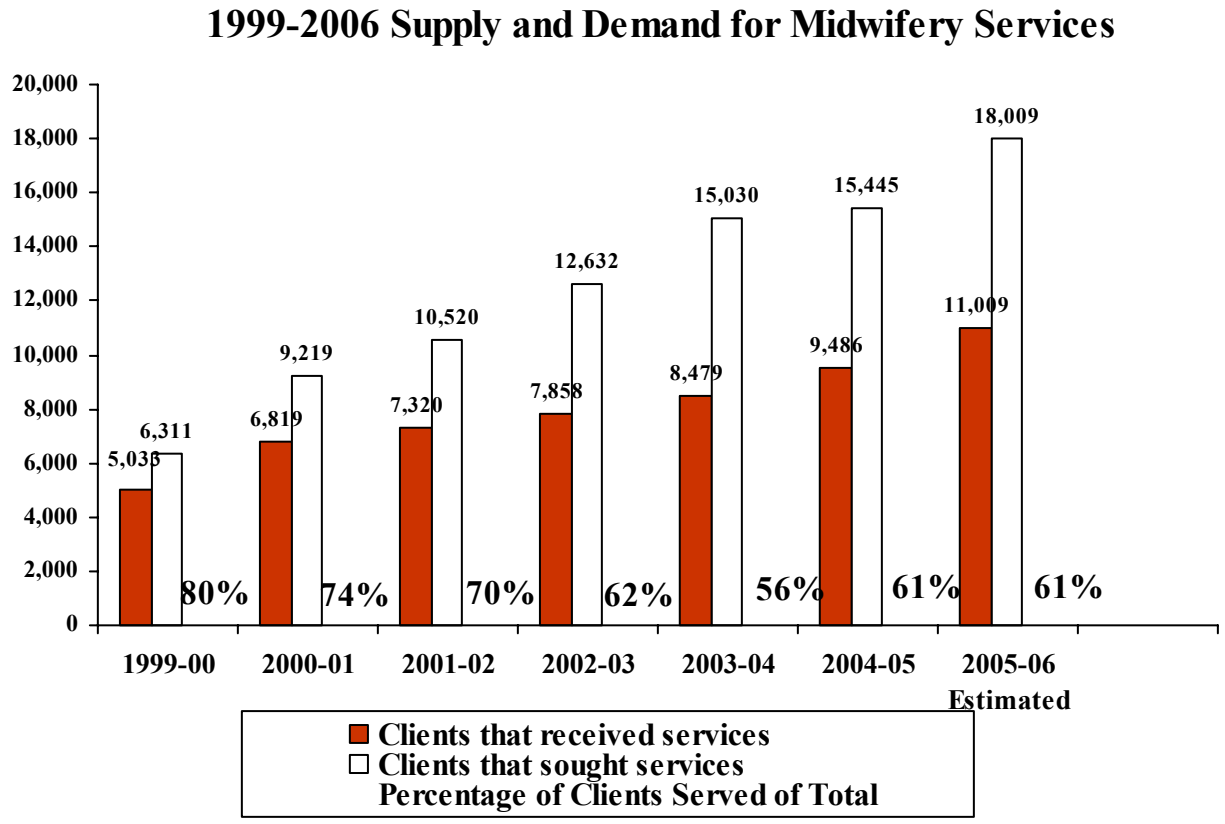
The midwifery scope of practice includes comprehensive maternity care services to healthy women and newborns throughout pregnancy, birth and up to six weeks postpartum; including the management of vaginal births on the midwife's own responsibility. Regulations govern the drugs, lab tests and ultrasound services that midwives can prescribe in the care of healthy women and newborns. Standards of practice set out the circumstances in which midwives are required to consult and/or transfer care to physicians.[72]

Midwives typically work in group practices of between 2-10 midwives and share clients among a small call group. Approximately 78% of midwifery clients choose to give birth in the hospital setting with 22% opting for home birth.[70] Since regulation, midwives have obtained admitting privileges at about 2/3 of Ontario birthing hospitals. Each midwife coordinates the care for an average of 40 women per year, with each course of care typically comprising pregnancy, labour, birth and postpartum care and participates in on-call coverage of all of the women cared for by her practice group. Midwives attend births in pairs, together providing a similarly comprehensive set of services to the physician-nurse team. The role of midwives cannot be understood by direct comparison to either physicians or nurses as it combines elements of both roles. Like physicians, midwives provide prenatal, intrapartum and postpartum care as the most responsible provider. Like nurses, midwives provide ongoing monitoring and support during labour and care for women and newborns in the immediate postpartum period.

The expansion of midwifery services offers women an alternative form of maternity care for low-risk pregnancies. It has also helped to mitigate some physician and nursing shortages, but there are not enough midwives in Ontario to meet the current demand for their services (Figure 2). In 2004-05, midwives were able to meet only 61% of demand[d].

[d] The Ontario Midwifery Program, Ministry of Health and Long-Term Care, collects a list from midwifery funding agencies of the women who are unable to be taken into care by the local practice group. These data are submitted each quarter along with financial reports. The demand for midwifery services cannot be measured in large areas of the province that have no midwifery practice group.

Figure 2 – Supply and Demand for Midwifery Services



Despite the demand for their services, OMCEP heard that some midwives face local restrictions on their scope and their ability to obtain admitting privileges in hospitals. For example, the care of women who need induction, augmentation and epidural analgesia is included in the midwifery scope, after consultation with an appropriate specialist. However, despite recommendations from the College of Midwives of Ontario, some hospitals in Ontario require a transfer of care to a specialist for these and other common procedures.[73] Others place limits on the number of women for whom the midwives may provide hospital care, when other providers are not limited.

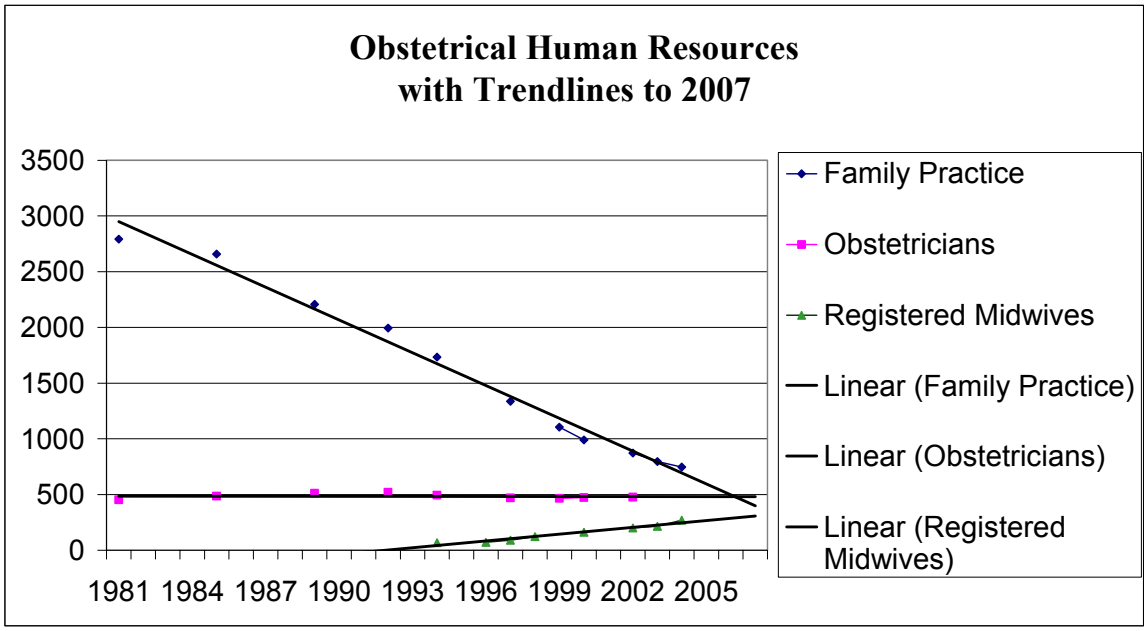
Focus group and stakeholder consultations revealed a lack of understanding about the midwifery scope and the contribution that midwives can make to the maternity care system in some settings. Preliminary reports from other maternity care projects confirm this finding.[16] In several communities with a documented shortage of maternity care providers and a poor forecast for physician recruitment, OMCEP found an ongoing inability to obtain hospital privileges and/or integrate fully with the local maternity care provider team.[74] The panel was contacted by several hospital administrators looking for assistance in integrating midwives more fully into their institutions and in developing collaborative approaches between the professions.

"It's a vicious circle: a lack of understanding of the midwifery scope leads to restrictive requirements for transfers of care [in addition to College of Midwives requirements]. The midwife never has a chance to prove her competence because care is transferred and she is not able to demonstrate her skills."

OMCEP Focus Group Participant – Member of Hospital Maternity Unit Review Team

Figure 3 – Physician and Midwife Intrapartum Care Providers

As the below chart shows, a loss of family physicians to intrapartum care is resulting in a net loss of intrapartum maternity care providers in Ontario.



Adapted from Lofsky/Adamson, from Report to Babies Can't Wait, 2005[59]

Current Issues in Education

Ontario has excellent health care education programs, but our consultations with educators and providers revealed concerns about lack of student exposure to maternity care generally and normal birth in particular. In addition, there is little coordination or integration among professional education programs, despite the fact that there is a strong trend – in maternity care and other areas of primary care in particular – towards inter and multi-professional teams.

Some rural focus group participants reported that confidence and competence in working in smaller hospitals is better fostered when providers learn to work in environments in which specialist back-up is not immediately available, i.e., not always in tertiary care centres.

Ironically, at a time when the maternity care workforce is needed more than ever to stabilize the system, maternity care curriculum in pre-licensure/undergraduate medical and nursing schools is under pressure. Some Ontario nursing schools no longer provide a core maternity care curriculum or clinical exposure to birth prior to graduation. Maternity care competencies have become increasingly seen as a specialized nursing skill set that is gathered as part of an elective clinical placement or on-the-job training (OMCEP Focus Groups, 2005 – Appendix G). Without early exposure to birth and maternal and newborn care, it is no surprise that fewer nurses appear to be attracted to a career in maternity care than in the past.

In the undergraduate medical school curriculum, students are exposed to one rotation as a clinical clerk under the obstetrics service on the labour floor. Family medicine residents

still have compulsory maternity care rotations; however, these are often within the department of obstetrics in academic health sciences centres where they are not exposed to family physician role models. Medical students and junior residents may actually "compete" to attend births when there is inadequate volume to meet the needs of all learners.

There is some evidence that recruitment and retention into maternity care is enhanced for those residents who are placed and later practice in smaller communities (15,000 and smaller).[69] Some studies point to the importance of family physician role models and exposure to enough births during residency.[75-77] Attracting academic family physician role models in Family Medicine Residency Programs is challenging. In one study 16% of graduating residents from Family Medicine Residency Programs chose to offer pregnancy and birth care two years later but this varied from 2% for University of Western Ontario and 9% for University of Toronto graduates to 38% in Thunder Bay.[69]

> *"if they don't learn together how can you expect them to work together"*
>
> *–OMCEP focus group participant obstetrician and academic educator*

Across Canada and the U.S., it had been challenging to fill all of the obstetric residency spots available. According to a 2004 Canadian Institute of Health Information (CIHI) report[56] the number of resident positions "has been greater than the number filled over the past seven years", however recruitment has improved and stabilized in the last two years.[60,78,79] Stakeholders report lack of funding for subspecialty training in obstetrics and gynaecology (e.g. maternal fetal medicine, gynaecological oncology, uro-gynaecology and reproductive endocrinology and infertility) and challenges in recruitment into subspecialties.

The Ontario government has expanded Ontario medical schools, including the establishment of the Northern Medical School (NMS), adding 320 spaces in total since 1999. It has also increased residencies for International Medical Graduates (IMGs) from 24 to 200 entering annually. These initiatives may assist in recruitment and retention of medical maternity care providers. Recent reports indicate that between 24%-30%[80,81] of medical students choose residencies in family practice and once in practice about 7% choose to provide maternity care in Ontario. Nationally about 45% of IMGs chose family medicine, but we did not find evidence about the number that chose to provide maternity care in this cohort.[79] About six percent of IMGs in Canada choose obstetrics and gynaecology residencies.

Although demand for midwifery services is out-pacing supply, the Ontario Midwifery Education Program reports that it has grown as far as is possible under its current funding arrangement. There are usually between 250-350 applicants for 60 spots. The number of graduates has increased incrementally to about 43 in 2006. The International Midwives Pre-registration Program has about 50 candidates for 20 spaces. About 15 international midwives graduate per year. The Midwifery Education Program was invited to submit a proposal for expansion by the Ministry of Training, Colleges and Universities in August 2004 but no decision has been made. The proposal includes an increase in inter-professional education and an advanced stream for nurses. At its current entrant class

size, the midwifery human resources pool will level off within approximately 20 years with new graduates merely replacing retiring providers.

Each of the professional programs reports challenges in finding an adequate volume of clinical placements. This can lead to an atmosphere of competition and can undermine collaborative relationships and inter-professional learning opportunities.

Although there is much enthusiasm for inter-professional education and some important examples of programs working together our consultations revealed many practical barriers to inter-professional teaching and learning. Inequitable funding for preceptorships across the professions and disparate curricula currently limit opportunities.

Stakeholders almost unanimously referred to programs such as MORE^{OB}, ALARM and ALSO[e], as important inter-professional continuing education courses as methods of creating the team for collaborative care.

Structural Supports for Maternity Care: Regulation, Funding and Liability Insurance

OMCEP consulted with regulators, representatives of professional associations and a cross-section of maternity care providers about structures, which are needed to support sustainable maternity care. Key informants identified that certain aspects of legislation, regulation and the funding and liability systems have entrenched barriers to the ongoing delivery of high quality maternity care and are limiting the implementation of positive change.

The current structure for regulatory change is not responsive to changes in clinical practice. Our consultations revealed situations in which simple advances in maternity care cannot be integrated without major revisions to regulations.

A commonly cited example is the lack of an effective response to the 1994 national standards established in the SOGC clinical practice guideline: *The Prevention of Early Onset Group B Streptococcal Infection in the Newborn.*[82] Although we found agreement amongst maternity care providers that midwives should be able to prescribe this routine prophylactic antibiotic on their own responsibility, regulatory bodies report a long-standing inability to amend the drug regulation. Care providers indicate this situation has not only resulted in the need for 'unnecessary' medical consultations (and OHIP billings), but can also strain inter-professional relationships by creating additional demands during night time hours.

Key informants also reported that current payment models can foster a competitive approach to sharing maternity care responsibilities. OMCEP received reports on promising inter-professional maternity care models that faltered prior to implementation as a result of a lack of appropriate funding mechanisms.[83] There are multiple systems of

[e] Managing Obstetrical Risk Efficiently (MORE$^{OB)}$ and Advances in Labour and Risk Management (ALARM) are offered through the Society of Obstetricians and Gynaecologists of Canada. Advanced Life Support in Obstetrics (ALSO) is offered through the College of Family Physicians of Canada. All courses are inter-disciplinary risk management and patient safety programs.

payment in Ontario including salary, alternative payment plan models, capitation models, blended models and fee for service. Intersecting payment mechanisms can introduce incentives and disincentives that undermine best practice and integrated care.

> *"There is a need for alternate payment systems for obstetricians [for backing up primary care providers]. The fee for service system can be a real stumbling block to collaborative care. Sometimes financial issues are underlying requirements for consultation and transfer of care"*
>
> *- OMCEP focus group participant, obstetrician*

Provider concerns about liability were cited to OMCEP as reasons for high rates of attrition among intrapartum care providers. Concerns about joint liability, overlapping scopes and misunderstandings about the legal status of midwives and nurse practitioners as the 'most responsible care provider' are beginning to be addressed by national insurers but remain the frequently cited barrier to inter-professional care. Major reforms in the management and acceptance of risk are required to alleviate recruitment challenges and to support team practice.

> *"Most of OMCEP's recommendations will not be achieved unless you fix the situation with insurers and their lack of support for team practice."*
>
> *-OMCEP focus group participant – Hospital Chief of Staff*

> *"Right now, the availability of care providers, not community health needs, determines who you see. One example is well baby care. In small communities, a public health nurse does this, in slightly larger communities a [family] physician does, and in urban centres you see paediatricians doing immunizations."*
>
> *-Participant, OMCEP Focus Group for Hospital Integration Reviewers*

Spontaneous Vaginal Births in Hospital

In 2003/04, 31.5% of women giving birth in Ontario went into labour and gave birth spontaneously, i.e., labour was not induced and forceps, vacuum or Caesarean section were not used. That means that 68.5% of women received some form of assistance for birth. This number does not include women who had pain relief during labour or birth, but otherwise had a physiologic labour and birth.

Interventions in the Birth Process

Ontario has significantly higher rates of medical intervention in the birthing process than other parts of Canada. For example, according to the most recent data for Ontario about 44% of women who gave birth in hospital were induced: about twice the Canadian average. Worldwide there are different opinions about the appropriate levels of delivery by Caesarean section. According to the World Health Organization, about 5 to 15% of births by Caesarean section is appropriate[84] - although there is ongoing debate about the ideal rate for Caesareans[85-87] and the impact of changing demographics and the evolution of care for more complex maternal and fetal conditions. Many western countries currently have rates between 20% and 25%. Rates are increasing internationally, but there is wide variation. Australia[88] and the U.S.[85] recently reported rates of over 29% while the Netherlands and Scandinavian countries continue to report rates below 15%.[89]

In 2003/04, 26% of Ontario women who gave birth in hospital had Caesarean sections, compared to 21% for Canada as a whole.[4] Reasons for the increase in Caesarean deliveries over the last decade are not well understood but may include system factors, provider trends and changes in public expectations about childbirth care. Contributing factors often cited include increased maternal age, a decrease in the number of planned vaginal births after previous Caesarean section, rising rates of induction with first births and medico-legal pressures. Maternal request is also cited but evidence is lacking regarding the importance of this trend in Ontario. Evidence from other countries suggests that there is also much media attention to the phenomenon but the incidence is low. SOGC recommendations support Caesarean section for breech birth. A higher rate of first birth Caesarean sections always magnifies future rates of Caesarean as more repeat surgeries are performed in later pregnancies. Recent data from the United States reveals that the most common indication for Caesarean section is dystocia or prolonged labour in first pregnancies.

Use of anaesthesia during childbirth has increased markedly. Epidural anaesthesia is the most common choice women request for pain relief in labour and this is one of several types of anaesthesia that can be required. In 2003/04, 69% of women giving birth in Ontario hospitals had anaesthesia, excluding local anaesthesia.

Across the province, as well as the country, there are significant regional variations in these interventions. These issues need analysis and clarification so that women and families can be properly informed and make the most appropriate decisions.[90]

Barriers to Comprehensive Maternity Care

Lack of Access to Prenatal Care and Postpartum Follow-up

In our consultations across the province, women reported a number of barriers to early and regular prenatal care including: the large number of physicians and midwives whose practices are closed, the long distances they had to travel to attend prenatal care and education classes; fragmented care when prenatal care is provided by a rotating walk-in clinic staff; and lack of timely access to prenatal screening.

Increased emphasis on options for early ultrasound and blood testing for women in the first 12 weeks of pregnancy has widened the divide between women who can access early

prenatal care and those who cannot. Priorities for reduced waiting lists in Ontario were characterized by OMCEP focus groups as overlooking maternity care.

> *"I tried everything, I called so many people, but I always heard the same thing: 'you're not in our catchment area'. How can this be? I am pregnant, I don't have time to wait for a space to open up, I need care now."*
>
> *-Participant, OMCEP Focus Group*

Obstetrical specialists report a growing number of women receiving their first maternity care services in late pregnancy as acute emergencies (e.g., maternal eclamptic seizure at 36 weeks gestation preventable by prenatal blood pressure monitoring) – an indication of inadequate prenatal care.

> *One manager of a family health program described that each family is allowed only one visit to the Healthy Babies, Healthy Children program. Longer term, home visits were only funded for two visits per family. Child health and Healthy Babies, Healthy Children were combined to extend the pool of resources. But there is pressure on staff resulting from shortages and lack of education. Scant community health services make it difficult to refer clients and waiting lists are common.*
>
> *– OMCEP focus group participant-Administrator*

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Analysis of the Greater Toronto Area by the Child Health Network indicated that a significant number of neonates <1500 grams are being born in environments that are not equipped to look after their needs.[91]

Infants under age one have the highest frequency of visits to emergency departments. While many of these visits may be appropriate, their frequency may be a sign that a more appropriate primary care provider is unavailable. Further research is needed in this area.[92]

Follow-up or postpartum care can help alleviate new parents' anxiety and reduce expensive and unnecessary hospital visits. Guidelines for "Family-Centred Maternity and Newborn Care" (developed by Health Canada and the Canadian Institute of Child Health)[93] call for mothers and newborns to receive a minimum of six weeks postpartum care. Ontario has a wide range of programs to support new mothers and babies -- including the services provided by family physicians, midwives and nurse practitioners, public health nurses, child health programs, Aboriginal Health Access Centres, women's health centres, Best Start and Healthy Babies Healthy Children - but women and health care professionals in our focus groups report cuts in these services in recent years. They also note the lack of integration among these programs and with other primary care and institutional services compounded by difficulties finding primary care providers taking

new patients, including newborns. Stakeholders we consulted raised concerns that lack of access to prenatal and postpartum care may be related to hospitals moving away from providing non-acute care services.

Lack of Equitable Access to Care and Culturally Sensitive Services

According to our focus groups and stakeholder consultations, current maternity care services are not meeting the needs of all recent immigrants. Women from different cultures have different needs in terms of language, translation, screening and care. Translation services, where available, may not be available 24 hours a day, creating significant barriers to effective communication during labour and birth. Immigrant women may bring with them traditions that they wish to combine with their maternity care (e.g., traditional Chinese medicine) and face difficulties in finding culturally sensitive services.

Those without health insurance may have little access to prenatal care and may present to a hospital in labour. The resources of care providers and hospitals serving non-status immigrants are overbooked and strained (OMCEP Focus Groups, 2005 – Appendix G). Although some hospitals provide clinics for the uninsured where midwives, nurses and physicians collaborate to provide care, we heard reports of denial of care even in urgent situations.

Ontario's maternity services also face challenges in meeting the needs of aboriginal women – in either urban or rural settings. In our consultations we heard that some aboriginal women want to be able to incorporate aboriginal midwives and healers into their care or receive primary maternity care services in their own communities (OMCEP Focus Groups, 2005 – Appendix G). For the past 30 years, however, Ontario has adopted the Canadian policy of evacuating pregnant women from remote Aboriginal communities to larger centres often hundreds of kilometres away from their homes. The personal, physical, financial and family burden that all women face when evacuated for care is exacerbated for aboriginal women.[49]

Some women, because of race, age, marital status, socioeconomic status and/or disability, are not able to access or receive appropriate treatment. Maternity services are often not designed to meet the more complex needs of, for example, women living in shelters or transition homes.

> *"I was kicked out of the last shelter because I tried to get my food [from the fridge] outside the hours. What can I do? I'm pregnant, I'm hungry and I need to eat."*
>
> *-Participant, OMCEP Focus Group*

Growing Demand for Maternity Care

Ontario is already facing problems of access to maternity care; without proactive changes to our system, we anticipate serious future challenges resulting from projected increases in our population, the projected number of annual births and their geographical distribution.

According to the Ministry of Finance mid-range forecast, the population of Ontario will grow by 4 million (32.6%) to 16.43 million by July 2031. As our population grows, the number of births will also increase from the current level of about 130,000 per year to 157,000 in 2024-25. The increase in births is related to immigration projections, more women of childbearing age and slightly increasing fertility rates.

The growth will take place against the background of health service provision that is already stretched and stressed. Population increase will also be uneven across Ontario, with dramatic increases in births in some areas and status quo levels in others, as is shown by the second below chart. In some areas of the province, up to 30% more births are anticipated over a 25-year forecast. This will make planning for maternity care even more challenging in both urban and dispersed population areas.

Figure 4

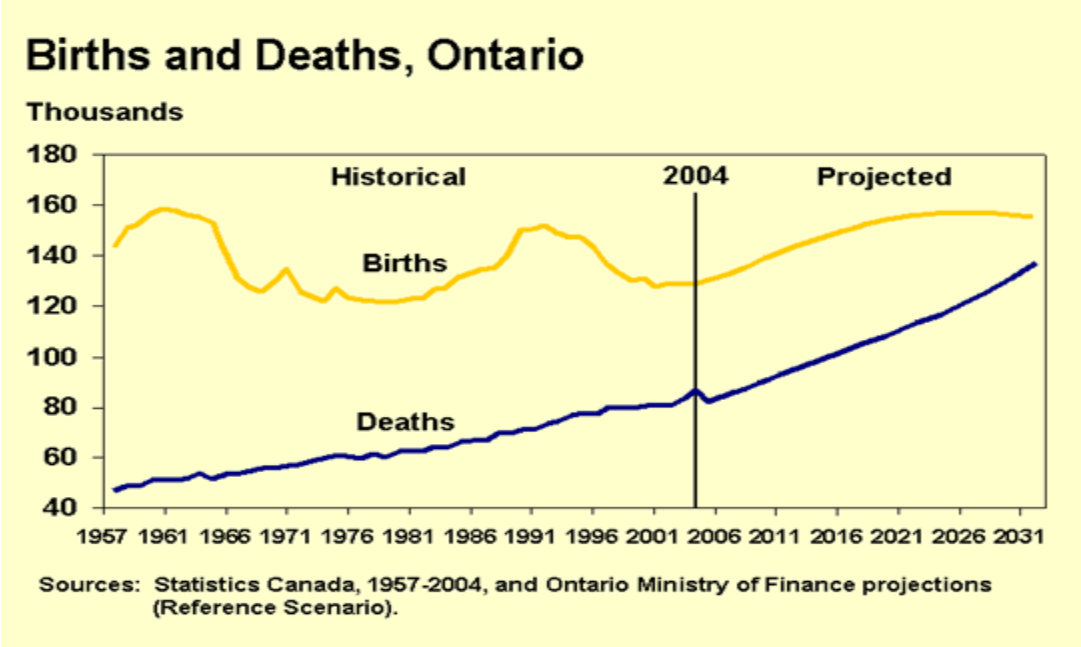
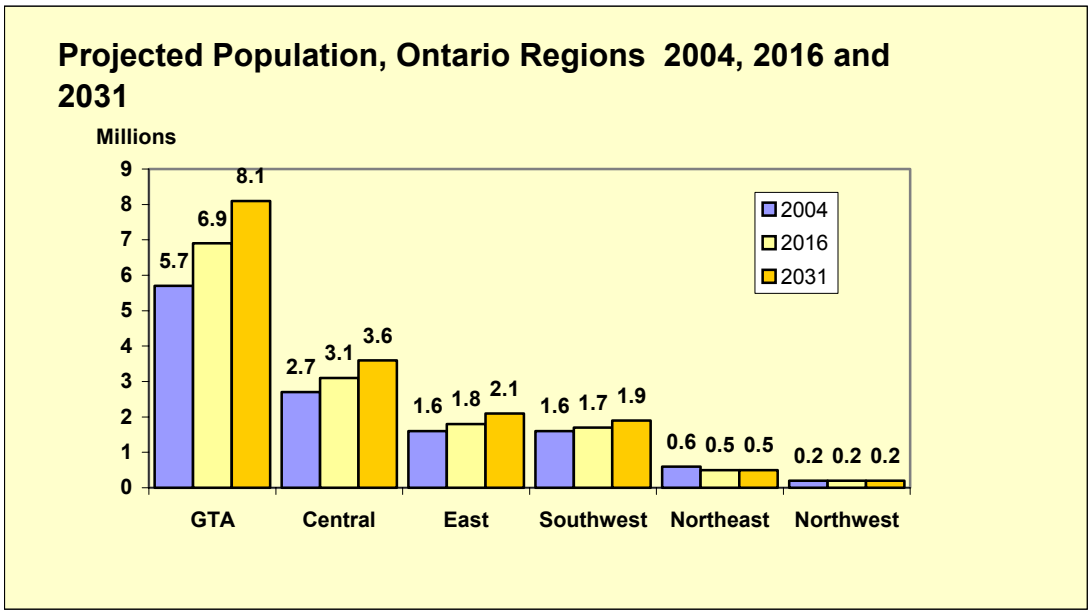


Figure 5



Adapted from Statistics Canada, 2004, and Ontario Ministry of Finance projections (Reference - midrange scenario).

Maternity Care Data

It's difficult to make good health care policy decisions without appropriate data, including timely, accurate and comprehensive maternal-newborn health information. Ontario's vital statistics are suboptimal, with regular delays in reporting; national reports on perinatal surveillance of maternal and newborn health indicators have historically excluded Ontario data due to its lack of completeness. Costing shifts to municipalities, including differential fees for birth registration, were referenced by OMCEP key respondents as contributing to families not registering some births, particularly stillbirths.

Panel members were surprised to find so little ready information and analysis relating to maternity care in the ministry. We were unable to find regularly published ministry maternity care reports on adequacy of prenatal care, comparable service delivery models, health human resources (especially for nurses), clinical outcomes, consumer satisfaction or cost-effectiveness. Most significantly, most analysis on physician health and human resource planning does not routinely identify those members of the obstetric, family practice and nursing specialties who attend births as part of their practice.

Indeed, budgets for large programs including physician payments, primary care, hospitals, public health and others were unable to extrapolate how much of their blended budgets are being spent on maternity care.

For example, although approximately 98% of Ontario births take place in hospitals, OMCEP could find no information on the distribution of hospital maternity care services until the panel surveyed hospitals last summer. Limitations regarding postal code

methodologies for tracking travel distance for women to maternity care prevented accurate analysis for most of rural Ontario. We need more systematic tracking of provincial data to improve maternity care and to ensure the right services are available where and when Ontarians need them.

A variety of government databases exist with information on health human resources, clinical outcomes, utilization of physician services, etc. What is perhaps the most extensive source of provincial data on intrapartum interventions and clinical outcomes (and also includes limited data on prenatal care) is managed by a non-governmental organization as a surveillance system. Over 90% of Ontario births are entered into the Niday database. Niday allows real time data collection, eliminating the need for hospital manual systems, and real time comparison and key indicator reports, facilitating realistic planning information. Hospitals and midwives are voluntarily participating in the Niday data collection. However, this system lacks a unique patient identifier creating challenges for linking the data with other sources. Linking some of these disparate databases to create one province-wide minimum data set for maternity care might provide the best opportunity to effectively measure the performance of several aspects of Ontario's maternity care system. An examination of current indicators for maternity care revealed some overlapping areas of data collection. For instance, perinatal data on intrapartum procedures and certain maternal and newborn outcomes for deliveries that take place in hospital can be found in the CIHI DAD as well as in the Niday database. The absence of relevant data on inter-disciplinary work teams and other important areas representing system functioning was also apparent.

While Ontario has much room to improve in this area, some ministry programs and external stakeholder groups should be commended for beginning to collect reliable, high-quality maternal and newborn health information. These initiatives include the Ontario Hospital Reports Collaborative, the Ontario Midwifery Program, the Niday Perinatal Database, Ontario's Southwest hospital region, the GTA Child Health Network, the Fetal Alert Network and others.

Several observations are offered to summarize the current state of maternity care data and indicators in Ontario:

- there are the beginnings of good sources of data for intrapartum procedures and maternal and newborn vital statistics
- the further you move away from the labour and delivery period, the less data that are available
- Public health data (Healthy Babies, Health Children) is not linked to hospital data
- more than one instrument for obtaining data on women's satisfaction with maternity care is available
- little or no routinely collected data are available on maternity care provider experiences and job satisfaction
- multiple emerging, but unfunded, options exist to collect data from hospitals on hospital services, gaps in service, maternity care providers, and practices to address challenges in providing maternity care

- although data on costs associated with physician's services are available, good data on other costs of maternity care associated with hospitalization or services from nurse practitioners are not available, though the Ontario Case Costing Initiative may be a reasonable source of patient specific costing data for hospital stays in the future

These developing data sets represent tremendous capacity, if properly expanded and integrated together in a central repository, to support multiple ministries, the LHINs, education programs, acute care institutions, service providers and the public to make the most informed decisions about maternity care for now and in the future in Ontario

Provincial Coordination and Stewardship of Maternal Care

A System under Stress

Ontario is an excellent place to be born or to become a mother. Our infant and maternal mortality rates are among the lowest in the world.[94] Our hospital readmission rates – for both mothers and newborns – are lower than the Canadian average. This is a credit to those providing care.

Access to maternity services depends on the right care at the right time in the right location. It involves timely availability of a range of health care services including: pre-pregnancy counselling, early and regular prenatal care, education, low to high-risk intrapartum services and postpartum maternal and newborn care.

However, signs are emerging that Ontario is facing a looming crisis in its ability to maintain sustainable maternity care services. Accommodations being made by care providers now, if left unchecked, risk negatively affecting our future high quality care, the sustainability of Ontario's health human resources, institutions and access for women to services (OMCEP Hospital Survey, 2005 – Appendix F).

Shifts in health human resources; the consolidation of birth services in fewer hospital sites; increased rates of interventions at births and reduced access to maternity services are not the result of deliberate provincial maternity care policies. Rather, they appear to be the indirect consequences of a decades-long blind spot toward the coordination of maternal-newborn health services as a whole. Ontario is fortunate that maternity care professionals, institutions, stakeholders and policy-makers across Ontario have maintained quality services amidst a fractured system and without clear policy direction and support.

Ontario is not currently making optimum use of the potential advice and support of ad hoc regional networks which, despite a lack of resources, have been convening in some regions to share concerns and solutions to maternity care issues. The care providers and women we consulted expressed frustration with the absence of a designated overarching program in the ministry tasked with improving maternal and infant health.

There is no question that Ontario faces an ageing population and compelling health care pressures from chronic disease, but by no measure does it make health care sense to neglect maternity care policy while responding to these issues. Maternity care is the ultimate long-term health care investment: it is a proactive step that contributes to Ontario's current strategies for low birth weight, diabetes, asthma, obesity, cardiac

disease, and cancer. By raising the prominence of maternity care, the province should expect improved long-term health outcomes, reduced chronic disease and more efficient management of downstream health expenditures.

Many key informants across Canada impressed on us the importance of provincial leadership and resources to support a ministry-led maternal-newborn care program as part of a well-functioning system, as opposed to other solely regional or local approaches to coordination. Strategies in other provinces typically involve a framework that situates maternity care as a key part of provincial primary care policy, with a coordination mandate that empowers the province to conduct maternal-newborn health campaigns and to maintain cohesion among provincial regions and relevant programs delivering services across the maternal-newborn care continuum.

Informed perspectives from many provinces that have undertaken regionalization initiatives of their own informed our view that without a provincial maternity care framework, the potential introduction of 14 LHIN planning and funding processes for maternity care will risk further deterioration of an already fragile system. LHINs would benefit from working collaboratively within a provincial strategy.

Looking forward, we hope that Ontario can learn from effective provincial stewardship models from other provinces and are grateful that we could use these models as the groundwork for our recommendations.

A VISION FOR MATERNITY CARE IN ONTARIO

PREAMBLE

OMCEP believes that quality maternity care requires widespread access for healthy women to local primary (low-risk) care and public health services from the prenatal stage through to postpartum care, plus a clear integrated infrastructure that ensures access to specialist advanced care when women are identified to have such needs.

Panel discussions and consultations revealed commonality and diversity in philosophies of care for pregnancy and birth, both among and between care provider groups and others we consulted. OMCEP's Vision and Principles received broad endorsement. Although stakeholders referred to them as so uncontentious as to be "motherhood and apple pie", the panel believes they are a strong basis on which to build the maternity care system, although we know that not all care providers will agree with all aspects. It would be unfair to either stereotype any of the provider groups or to avoid noting the potential importance of diverse views and philosophies in discussions of how to structure maternity care; the meaning and implications of the "normalcy" of birth and the "risks" of birth are central to debates about how to interpret evidence for best practice, how to plan services and how to improve inter professional relationships.

These debates are not unique to Ontario: they are national and international and have been well documented in the medical and social science literature.[84,95,96] OMCEP expects them to continue. Clinical practice and health policy is not simply based on scientific evidence but reflects philosophies, attitudes and cultures. Provincial stewardship and professional leadership is needed to provide ongoing forums for debate and dialogue across the professions, with policy makers and with the public. Openly engaging these issues is a vital part of the process of collaboration and development of best practice.

Based on our experience providing maternity care and on our consultations with women, health professionals and others across the province, the Ontario Maternal Care Expert Panel proposes the following vision and principles to guide maternity care in Ontario.

OMCEP Vision Statement:

Every woman in Ontario has access to high quality, woman and family-centred maternity care as close to home as possible.

GUIDING PRINCIPLES FOR MATERNITY CARE IN ONTARIO

Woman and Family-Centred Care Principles

Care across the Continuum of Maternity and Newborn Care:

Comprehensive maternity care will be available to all women, newborns and their families across the continuum of maternity care services: from pre-pregnancy planning and prenatal care, through labour and birth, to postpartum maternal and infant care and breastfeeding support.

Optimal clinical care and health promotion and education are available across the continuum of care. Each woman will receive the information and education she needs, to promote informed decisions, the healthiest possible pregnancy, a safe and fulfilling childbirth and early parenting experience. Care includes breastfeeding support and postpartum care, for the woman her newborn and her family.

Equitable Access to Care as Close to Home as Possible:

The maternity care system supports women to give birth in their communities, whenever possible. Local birth services are designed to support the best health outcomes for women and newborns, provide family-centred care and maintain the family unit and strengthen the community. Each community should develop a local maternity care plan that will ensure that, as many elements of maternity care are available locally as possible. At a minimum, prenatal and postpartum care should be available in each community, and low-risk labour and birthing services should be available as close to home as possible.

Innovative and collaborative models of care are in place to help communities make the most of their available resources and maintain maternity services, even in communities with a low volume of births, such as rural and remote areas. Given the diverse geography and populations of Ontario, equitable access does not mean care options will always be the same in all regions. The guiding principle for system planning is access to primary prenatal, intrapartum and postpartum maternal and newborn care as close to home as possible.

If the size of the community, lack of providers or facilities limits maternity services and care has to be provided at a distance from the mother's home, maternity care services should cover the cost of transportation (to and from the setting for birth) and accommodation for the woman and at least one other family member.

Pregnancy and Birth as a Normal Physiological Process:

The process of pregnancy and childbirth will be viewed as a normal physiological process for most women and an important life event for all women and families. The majority of women have low-risk pregnancies and the maternity care system will be primarily organized around providing services appropriate to each woman's needs. Care systems advocate and promote best practices to support normal birth, appropriate use of intervention and excellent outcomes. Inter-disciplinary Centres of Excellence for Normal Birth, established both in hospitals and in the community, will lead research and education which supports best practice for physiologic birth.

Regional Coordination of Services and Access to High-Risk Care:

Provincial and regional maternity care plans include coordinated access to high-risk care in each region, as close to home as is possible and meeting the transportation needs of the family. Quality maternity care is based on primary care in communities and regional centralization of high-risk care, involving a critical mass of specialized staff. Early recognition, intervention and transportation to such specialized facilities should be available to all women requiring complex care.

Outreach, including links between low and high volume centres, Telehealth and other electronic links to consultation and treatment are part of regional access to service, education and planning. Regional centres are not only referral centres but are regional resources for designated community hospitals and other maternity services, thus fostering co-ordination, integration, accountability and improved levels of care.

Empowerment and Participation of Women:

Maternity care in Ontario will have as its primary focus the women and families using the services. Woman-centred care places the woman at the 'heart' of the efforts of all her health care providers and as an integral member of the care team. Her needs and choices will determine the focus for the planning and delivery of her individual maternity care. This philosophy of care is distinct from an approach to service provision organized primarily around the needs of the provider, the hospital or the health care system.

Women's empowerment in personal and systemic decision-making around maternity care will be an integral part of Ontario's maternity care model and will lead to an increase in accountability. A women-centred maternity care system can only exist with the active participation of women in the planning, delivery, monitoring and evaluation of maternity care services at the local, regional and national level. Women who have used the maternity care system will participate along side providers to be represented in all major policy, planning and evaluation initiatives of that system.

Family-Centred Care:

Care is recognized as a relationship, which involves a partnership between care providers, women and their families. Care is provided according to *National Guidelines for Family-Centred Maternity and Newborn Care*: "a complex, multidimensional, dynamic process of providing safe, skilled and individualized care. It responds to the physical, emotional and psychosocial needs of the woman and her family. In family-centred maternity and newborn care, pregnancy and birth are considered normal, healthy life events. As well, family-centred maternity and newborn care recognizes the significance of family support, participation and choice. In effect, it reflects an attitude rather than a protocol."

Continuity of Care – including continuity of "carer", of philosophy, of relationship:

The hallmarks of continuity of care are a familiar relationship and/or philosophy of care between each woman and the team of care providers involved throughout the course of pregnancy, birth and postpartum care. Continuity of "carer" occurs when one provider or a small team known to the woman is responsible for the woman's care throughout pregnancy and childbirth. Continuity can also be provided by teams

who share the same philosophy of care and effectively share information about the woman's care plan. Each maternity service will inform women about their approach to continuity of care.

Informed Choice:

Maternity care providers will respect the autonomy of women receiving maternity care, consistent with clinical ethics and provincial legislation. Women will make choices in maternity care based on information about the best available evidence and their needs, values and preferences. Choice entails the right to select the provider, the nature of her maternity care and childbirth services, and the location where she gives birth, informed by best practice clinical guidelines whenever available. Informed choice means that women will have full and timely access to education based on the available evidence, including risks, benefits and alternatives. Information should include community standards, the care provider's recommendations (if any), and what is known and not known related to both safety and satisfaction in order for each woman to be in the best position to make decisions about her maternity care.

Choice of Birthplace:

Choice of birthplace includes access to maternity care in local communities, as close to home as possible. Choice of birthplace is guided by informed choice about potential benefits, limitations, risks and alternatives. Maternity units in hospital provide women choice through a philosophy of care, processes and procedures designed to offer care in a personable setting. Birth centres offer choice of birthplace in some communities. A percentage of women choose a home birth and Ontario's maternity care system respects and responds to that choice and supports the care providers who attend home births.

Quality Care to Diverse and Vulnerable Populations:

Ontario's maternity care system will be responsive to the needs of all women, including diverse and vulnerable populations of women who may face additional barriers to care. In Ontario, care to diverse populations includes aboriginal women and their families, diverse racial and ethno-cultural communities and francophone communities. Maternity services will also address potential barriers to care including: age; body size; disabilities; fear of partner abuse; language barriers; marital status; mental health issues; poverty or low socio-economic status; rural and remote status; sexual orientation; substance use or other challenges.

All women will receive socially and culturally appropriate maternity care, without fear of discrimination. Maternity care providers (including aboriginal midwives and francophone providers) will receive education about systemic marginalization of vulnerable communities and be sensitive to diverse health care needs. Maternity services will strive to be open, accessible and inclusive.

Maternity care planning, from the local to the provincial level will take into account the needs of diverse and vulnerable communities and principles of social justice.

Principles of Service Provision

Valuing Maternity Care Providers:

All those involved in the health care and education systems in Ontario will promote maternity care as a respected and viable career goal for health care professionals. Each maternity care provider group will be valued and each in turn will value the other. Retention of quality care providers can only occur when the health care system acknowledges the responsibilities of maternity care and supports providers with the education, skill development, reimbursement and incentives needed for the length of their careers. To protect maternity care in small communities, and rural and remote areas, the provincial model will undertake whatever additional education, skill development, remuneration and incentives are necessary to support providers working under these unique circumstances.

Collaboration – Respectful, Seamless, Inter-professional:

Collaboration is a prerequisite for high quality maternity care and relies on mutual respect, trust and support among all health care providers and mechanisms to resolve issues between team members. Care providers will learn about and understand each other's scopes of practice; support each other to work fully within their scopes and value each other's roles and contributions. Through multiple models of maternity care, including multi-professional and inter-professional models, effective relationships are fostered between care providers and also with the women and families they serve. Each maternity care service has mechanisms to promote respectful and effective collaboration and to resolve problems if they arise. The principles of collaboration are reflected in service provision and policy-making. .

Provider Preparation, Competence and Confidence:

All maternity care providers should receive high quality preparatory and continuing academic and clinical education, and be offered advanced skills development and mentoring throughout their careers. With the rapidly changing research information, continuing education is a key part of inter-disciplinary learning. With this education, providers can develop the competence and confidence needed to offer women and children the highest quality of care. Ongoing inter-professional education opportunities foster a common understanding of emerging care practices.

A provincial model of maternity care will utilize a health and human resources planning process to ensure a sufficient number of the following: openings in schools of medicine, nursing and midwifery to meet the Province's need for new providers, continuing education for ongoing providers, and advanced skills placements to providers in key areas of maternity care. Academic and clinical learning centres will develop, promote and teach inter-professional models of education and collaboration.

Sustainable Services:

Maternity services are designed to both meet the needs of women and their families and to balance the importance of job satisfaction, respectful work environments and reasonable lifestyle for retaining care providers and maintaining a sustainable service for the community. Each community and region is involved in planning for models of care, recruitment and retention that promote long-term access and sustainability.

Principles of Provincial Stewardship and Coordination

Provincial Coordination of Services:

The health and well-being of all pregnant women, their children and families, is best protected by an effective provincial coordination of services which supports regional networks of services and equitable implementation at the local level.

Provincial stewardship and coordination is based on a population health perspective; services are planned and delivered based on an accurate assessment of regional and population needs, with a goal of equity of services across all communities.

Coordination will include a permanent and fully-funded central planning mechanism for maternity care, with active participation by women users of services, representatives from all provider groups, as well as those coordinating any legislation, policy, regulations and liability protection issues for maternity care providers.

Maternity Care as a Part of Primary Care

Ontario will align its maternity care systems with its primary health care initiatives in keeping with the World Health Organization Ljubljana Charter on Reforming Health Care.[f] Since most women have normal uncomplicated pregnancies, their maternity care should be aligned with their other primary health care needs and options for care by the most appropriate primary health care providers including family physicians, midwives, nurse practitioners and obstetricians (offering primary care). Strong linkages should be developed between health promotion initiatives for women and pregnancy planning and early prenatal care. Women and their children should be supported well into the postpartum period and linkages made to parenting services, to Early Years' programs for young children, and to primary health care and mental health services for new mothers.

Alignment of System with Determinants of Health through Other Ministries:

Maternity care must exist within a framework of general health and social well being for all women. Achievement of optimal health involves a balance of physical, mental, environmental and social contributors. The Province will co-ordinate with other ministries on an inter-sectoral approach to the promotion of health through

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[f] In 1996, the World Health Organization passed the "Ljubljana Charter on Reforming Health Care". In that document WHO affirmed the following fundamental principles for health care. Health care systems should be:

1. driven by values of human dignity, equity, solidarity, and professional ethics;
2. targeted on protecting and promoting health;
3. centred on people, allowing citizens to influence health services and take responsibility for their own health;
4. focused on quality, including cost effectiveness;
5. based on sustainable finances, to allow universal coverage and equitable access; and, oriented toward primary health care

policy that addresses the determinants of health as outlined by Health Canada[g].

Continuous Evaluation and Improvement:

All stakeholders participate in the planning, monitoring, evaluation and continuous improvement of maternity services. Individual providers and maternity care organizations protect the health of women and children by instituting, monitoring and improving standards of maternal and neonatal care. Provincial stewardships supports individuals and organizations with the funding, data collection, risk management and research necessary to maintain Ontario's standards as among the highest in the world.

Financial Responsibility and Accountability:

Cost effectiveness is an important guiding principle for Ontario's model of maternity care, provided it is always considered within the context of quality of care principles. The goal is to ensure the allocated budget is spent in a coordinated, integrated and effective manner, responsive to the needs of women their families and their children

[g] The factors which can affect an individual's health, or that of a whole community or population, are called 'determinants of health'. Health Canada lists 12 main determinants of health. (OMCEP has made some slight alterations to the last two determinants):

- income and social status;
- social support networks;
- education and literacy;
- employment/working conditions;
- social environments;
- physical environment
- personal health practices and coping skills;
- healthy child development;
- biologic and genetic endowment
- health services
- gender
- culture

1. Multi-disciplinary Collaborative Primary Maternity Care Project. Guidelines for development of a multi-disciplinary collaborative primary maternity care model. Ottawa; 2006 Apr.

2. Statistics Canada. Births, 2003. The Daily; 2005 Jul 12.

3. Ministry of Finance Projections, 2004.

4. Canadian Institute for Health Information. Giving birth in Canada: a regional profile, 2004.

5. Mustard JF, McCain MN, Bertrand J. Changing beliefs to change policy: the early years study. ISUMA 2000 Autumn;1(2):76-9.

6. Alberta Perinatal Health Program. Website: http://www.aphp.ca

7. British Columbia Reproductive Care Program. Website: http://www.rcp.gov.bc.ca

8. Reproductive Care Program of Nova Scotia. Website: http://rcp.nshealth.ca

9. Prince Edward Island Reproductive Health Programme. Website: http://www.gov.pe.ca/infopei/onelisting.php3?number=20616

10. A report of Manitoba's working group on maternal/newborn services [in press]. 2005 May.

11. Maternity Care Enhancement Project. Supporting local collaborative models for sustainable maternity care in British Columbia. 2004 Dec.

12. Nova Scotia Department of Health. Report of the Primary Maternity Care Working Group. Halifax; 2005 Jun.

13. Lalonde AB. Access to maternity care [editorial]. JOGC 2005 May;27(5):445-6.

14. Pellizzari R, Medves J. Ontario’s maternity crisis: a time for action. Ontario Women's Health Council. 2002 Nov.

15. Kasperski JM. Babies can't wait: primary care in obstetrics crisis. A solution focused PHCTF research project. 2004 Dec 9.

16. Rogers J. Integrated maternity care for rural and remote communities. A proposal to the Primary Health Care Transition Fund, Health Canada. 2004.

17. The Society of Obstetricians and Gynaecologists of Canada. Multidiscpilinary collaborative primary maternity care. A proposal to the Primary Health Care Transition Fund, Health Canada. 2004 Feb.

18. The South Vancouver Birth Programme: A new model of maternity care. Collaboration for Maternal and Newborn Health Conference: Maternity Care in the 21st Century. Vancouver; 2005 Feb.

19. Obstetric manual: Final report of the obstetric working group of the national health insurance board of the Netherlands [abridged]. Available from: http://europe.obgyn.net/nederland

20. Department of Health. National service framework for children, young people and maternity services. Part III: Maternity services. United Kingdom; 2004 Oct 4.

21. The Royal Australian and New Zealand College of Obstetricians and Gynaecologists. GP obstetrics: is it an endangered profession? O&G 2004 Mar;6(1).

22. The Scottish Executive. A framework for maternity care services in Scotland. 2001 Feb. Available from: http://www.scotland.gov.uk/library3/health/ffms-00.asp

23. Helewa M. Maternity care: crisis within and without [editorial]. JOGC 2005 Sep;27(9):845-6.

24. Registered Nurses Association of Ontario. Seventy percent (70%) full time RN employment. Available from: http://www.rnao.org

25. Rourke J. Trends in small hospital obstetric services in Ontario. Can Fam Physician 1998;44:2117-24.

26. Hutten-Czapski PA. Decline of obstetrical services in northern Ontario. Can J Rural Med 1999;4(2):72-6.

27. Nesbitt TS, Connell FA, Hart LG, Rosenblatt RA. Access to obstetric care in rural areas: effects on birth outcomes. Am J Pub Health 1990;80(7):814-8.

28. Nesbitt TS. Rural maternity care: new models of access. Birth 1996 Sept;23(3):161-5.

29. Nesbitt TS, Larson EH, Rosenblatt RA, Hart LG. Access to maternity care in rural Washington: its effect on neonatal outcomes and resource use. Am J Public Health 1997;87(1):85-90.

30. Epoo B, Nastapoka U, van Wagner V. Bringing birth back to the community: midwifery in the Inuit villages of Nunavik. Proceedings of the International Confederation of Midwives, 2005 Jul.

31. Canadian Healthcare Association. Guide to Canadian healthcare facilities, 2005-06. CD Abridged Version Vol. 13. Ottawa: The Association; 2005.

32. Medves JM, Davies BL. Sustaining rural maternity care--don't forget the RNs. Can J Rural Med 2005;10(1):29-35.

33. Black DP, Fyfe IM. The safety of obstetric services in small communities in northern Ontario. CMAJ 1984;130:571-6.

34. Woolard LA, Hays RB. Rural obstetrics in New South Wales. Aust NZ J Obstet Gynaecol 1993;33(3):240-2.

35. Tracy SK, Sullivan E, Dahlen H, Black D, Wang YA, Tracy MB. Does size matter? a population-based study of birth in lower volume maternity hospitals for low risk women. BJOG 2006 Jan;113(1):86-96.

36. Rosenblatt RA, Reinken, J, Shoemack P. Is obstetrics safe in small hospitals? Evidence for New Zealands regionalised perinatal system. Lancet 1985;2:429-32.

37. Grzybowski SCW, Cadesky AS, Hogg WE. Rural obstetrics: a 5 year prospective study of the outcomes of all pregnancies in a remote northern community. CMAJ 1991 Apr 15;144(8):987-94.

38. Peddle LJ, Brown J, Buckley J, Dixon W, Kaye J, Muise M et al. Voluntary regionalization and associated trends in perinatal care: the Nova Scotia reproductive care program. Am J Obstet Gynecol 1983;145(20):170-6.

39. Moster D, Lie RT, Markestad T. Neonatal mortality rates in communities with small maternity units compared with those having larger maternity units. Br J Obstet Gynaecol 2001 Sep;108:904-9.

40. Heller G, Richardson DK, Schnell R, Misselwitz B, Kunzel W, Schmidt S. Are we regionalized enough? Early-neonatal deaths in low-risk births by the size of delivery units in Hesse, Germany 1990-1999. International Journal of Epidemiology 2002;31:1061-68.

41. Finnstrom O, Berg G, Norman A, Olausson PO. Size of delivery unit and neonatal outcome in Sweden. A catchment area analysis. Acta Obstetrica et Gynecologica 2006;85:63-67.

42. Kaczorowski J, Levitt C. Intrapartum care by general practitioners and family physicians. Can Fam Physician 2000;46:587-96.

43. Lofsky S. Obstetric human resources in Ontario 1996-97: changing realities, changing resources. Ontario Medical Review 1998 Nov;65(10):24-31.

44. Milne JK. Human resources crisis in obstetrics and gynaecology [editorial]. SOGC News 2001 Oct:1.

45. Reynolds L. What do we need in order to rebuild Canadian maternity care. The Accoucher 2000 Sep;7(3):1-2.

46. Iglesias S, Grzybowski SCW, Klein MC, Gagne GP, Lalonde A. et al. Rural obstetrics: Joint position paper on rural maternity care. Can J Rural Med 1998;3(2):75-80.

47. Torr E, editor, for the British Columbia Reproductive Care Program. Report on the findings of the Consensus Conference on Obstetrical Services in Rural or Remote Communities, Vancouver, BC, Feb. 24-26, 2000. Can J Rural Med 2000;5(4):211-17.

48. Reynolds L, Klein MC, editors. Recommendations for a sustainable model of maternity and newborn care in Canada. Proceedings of the Future of Maternity Care in Canada: Crisis and Opportunity; 2000 November; London, Ontario, 2001.

49. Society of Obstetricians and Gynaecologists of Canada. A guide for health professionals working with Aboriginal peoples. SOGC Policy Statement No. 100; 2000 Dec.

50. Klein MC, Johnston S, Christilaw J, Carty E. Mothers, babies and communities: centralizing maternity care exposes them to complications and endangers community sustainability [editorial]. Can Fam Physician 2002 Jul;48:1177-9.

51. Kornelsen J, Grzybowski S. Is local maternity care an optional service in rural communities? JOGC 2005;27(4):327-9.

52. Rogers J. Sustainability and collaboration in maternity care in Canada: dreams and obstacles. Can J Rural Med 2003;8(3):193-8.

53. Houd S. The outcome of perinatal care in Inukjuak, Nunavik, Canada 1998-2002. Birth International [electronic journal]. Available from: http://www.acegraphics.com.au/index.html

54. Orrantia E, Poole H, Strike J, Zelek B. Evaluation of a novel rural obstetrical care model. Presentation to Canadian College of Family Physicians, Family Medicine Forum, 2004 Nov.

55. Registered Nurses Database (RNDB). Canadian Institute for Health Information.

56. Canadian Institute for Health Information. Giving birth in Canada: providers of maternity and infant care. 2004.

57. Medves J, Davies B, Heino A. Report of a survey of rural maternity nurses practicing in Ontario [in review].

58. Lankshear S, Rush J. Acute care nursing plan report. A report for the Ministry of Health and Long-Term Care, 2005.

59. Lofsky S, Adamson M. Changing trends in obstetrical physician resources in Ontario 1992-2003. Report to "Babies Can't Wait". 2005 Mar.

60. Stanimir G. Shared obstetrical care: A case study [slide presentation]. Ontario Hospital Association Interdisciplinary Care Conference. Toronto; 2004 Dec 10.

61. Smith LFP, Reynolds JL. Factors associated with the decision of family physicians to provide intrapartum care. CMAJ 1995;152(11):1789-97.

62. Ontario Medical Association, Committee on Reproductive Care. Trends in reproductive care: a medical perspective. OMA, 1995.

63. OHIP Claims for Medical Services (FY 2001 to FY 2003), Ontario Ministry of Health and Long Term Care.

64. Reid T, Grava-Gubins I, Carroll JC. Maternity care report: Family physicians meeting the needs of tomorrow's society. Can Fam Physician 2002;48:1225-6.

65. Roberts RG, Bobula JA, Wolkomir MS. Why family physicians deliver babies. J Fam Pract 1998 Jan;46(1):31-3.

66. Klein MC, Kelly A, Spence A, Kaczorowski J, Gryzbowski S. In for the long haul: which family physicians plan to continue delivering babies? Can Fam Physician 2002;48:1216-22.

67. Wiegers TA. General practitioners and their role in maternity care. Health Policy 2003;66(1):51-9.

68. Goluboff S, Reynolds L, Klein M, Handfield-Jones P. Privileging and consultation in maternity and newborn care. College of Family Physicians of Canada. Available from: www.cfpc.ca

69. Godwin M, Hodgetts G, Sequin R, MacDonald S. The Ontario Family Medicine Residents Cohort Study: factors affecting residents' decisions to practice obstetrics. CMAJ 2002;166(2):179-84.

70. Ontario Midwifery Program, Ministry of Health and Long-Term Care.

71. College of Midwives of Ontario. Registrants binder. December 2005. Available from: http://www.cmo.on.ca

72. College of Midwives of Ontario. Indications for mandatory discussion, consultation and transfer of care. 2000 Jun. Available from: http://www.cmo.on.ca

73. College of Midwives of Ontario. When hospital policies differ from College standards. Available from: http://www.cmo.on.ca

74. Association of Ontario Midwives. Midwifery practice group - hospital integration survey. 2004 May.

75. Ratcliffe SD, Newman SR, Stone MB, Sakornbut E, Wolkomir M, Thiese SM. Obstetric care in family practice residencies: a 5-year follow-up survey. JABFP 2002 Jan/Feb;15(1):20-4.

76. Biringer A, Tannenbaum D, Caplan J. Provision of maternity care by family medicine graduates of a tertiary care hospital. Hope for the future? Presented at NAPCRG, New Orleans, November 18, 2002.

77. Levitt C. Training for family practice obstetrics [editorial]. Can Fam Physician 2002 Jul;48:1175-6.

78. Canada's health care providers: 2005 Chartbook. Canadian Institute for Health Information; 2005.

79. Crutcher RA, Banner SR, Szafran O, Watanabe M. Characteristics of international medical graduates who applied to the CaRMS 2002 match. CMAJ 2003;168(9):1119-23.

80. Professional Association of Interns and Residents of Ontario. Primary importance: new physicians and the future of family medicine. Position paper on the sustainability of family medicine. 2004 Jun.

81. Canadian Federation of Medical Students. Decreased interest in family medicine: Position paper. 2005 Apr 30. Available from: http://www.cfms.org

82. The Society of Obstetricians and Gynaecologists. The Prevention of Early-Onset Neonatal Group B Streptococcal Disease. Clinical Practice Guideline No. 149, 2004 Sep.

83. Thunder Bay Collaborative Maternity Centre and Chronic Disease Management Centre. Primary Health Care Transition Fund, Health Canada. 2004.

84. World Health Organization. Appropriate technology for birth. Lancet 1985 Aug 24;2(8452):436-7.

85. Resnik R. Can a 29% Caesarean delivery rate possibly be justified? [editorial]. Obstet Gynecol 2006 Apr;107(4):752-4.

86. Cyr RM. Myth of the ideal Caesarean section rate: commentary and historic perspective. Am J Obstet Gynecol 2006;194:932-6.

87. de Costa CM, Robson S. Throwing out the baby with the spa water? MJA 2004;181(8):438-40.

88. Laws PJ, Sullivan EA. Australia's mothers and babies 2003. Sydney: AIHW National Perinatal Statistics Unit; 2005 Dec; Perinatal Statistics Series Number 16.

89. European Institute of Women's Health. Women's health in Europe: facts and figures across the European Union. Dublin, Ireland; 2006.

90. Canadian Institute for Health Information. Hospital Discharge Abstract Database (FY 1996 to FY 2003).

91. Child Health Network of the Greater Toronto Area. Strengthening the maternal, infant and newborn system by design. Toronto; 2005 Mar.

92. Canadian Institute for Health Information. Giving birth in Canada: the costs. 2006.

93. Health Canada. Family-centred maternity and newborn care: national guidelines. Ottawa: Minister of Public Works and Government Services; 2000.

94. Public Health Agency of Canada. Make every mother and child count: report on maternal and child health in Canada. 2005 Apr 7.

95. Downe S, editor. Normal childbirth: evidence and debate. Philadelphia: Churchill Livinstone; 2004.

96. Johanson R, Newburn M, Macfarlane A. Has the medicalisation of childbirth gone too far? BMJ 2002;324:892-95.

A MATERNITY CARE STRATEGY FOR ONTARIO

Effective and comprehensive maternity care is an essential part of health strategy. Research results are increasingly clear: maternity care quality directly affects the current and long-term well being of Ontarians and it will exert a powerful influence on health costs and health outcomes in our publicly funded system.[1,2-7]

Many key maternity care issues depend on provincial leadership and ministry coordination. There is a need for funded, team approaches to service provision and for clear voices for women and other stakeholders in decision-making. Coordinated ministry access to health human resources planning information, service delivery levels, consumer satisfaction and costing information is critical along with budget planning that includes strategic responses to identified system problems. In OMCEP focus groups, providers voiced support for such a provincial framework, and childbearing women also expressed great interest in active participation in policy making in the maternity care system.

The panel has sought solutions by considering both the principles of Ontario's current broad transformation agenda and the lessons learned by other provinces as they address maternity care issues.[8,9] The current ministry organizational restructuring presents an opportunity for maternity care strategy development that will complement other government initiatives.

OMCEP believes that Ontario's current maternity care activities and policies can be substantially improved through better coordination.

Our recommendations set out a comprehensive approach to the stabilization, integration and coordination of the maternity care system. Achieving OMCEP's vision for maternity care demands that the recommendations be implemented in a comprehensive way.

Government Ministries that offer Maternal Newborn Health Programs:

Ministry of Health and Long-Term Care

Ministry of Children and Youth Services

Ministry of Health Promotion

Ministry of Training, Colleges and Universities

Ministry of Citizenship and Immigration

Ministry of the Attorney General

Ministry of Government Services

Provinces such as British Columbia, Alberta, Nova Scotia and Prince Edward Island [10,11-13] are already working actively to revitalize their maternity services through provincial maternity care strategies. OMCEP recommends that Ontario also launch a provincially led ministry program.

In light of our observations of Ontario's current maternity care system, the panel recommends:

That the Government of Ontario establish an Office of Maternal Newborn Health or equivalent mechanism, led by the Ministry of Health and Long-Term Care with expertise, resources and authority to link health divisions and other ministries with related programs to provide stewardship for maternity care in Ontario.

The Office of Maternal Newborn Health would be responsible for:

- using population health principles to develop a provincial framework for maternity care services, and to work within the framework to approve regional plans
- providing ongoing strategic direction for maternity services
- setting priorities and targets for maternity care
- improving the quality and consistency of maternity care across the province
- harmonizing educational, legislative, regulatory, funding and liability protection systems for maternity care
- monitoring maternity care services across the province, and producing an annual public report on the performance of the maternity system
- working with Local Health Integration Networks, provincial programs and stakeholders to ensure accountability and value for maternity care resources and optimal functioning of all aspects of the system
- working with federal, provincial and territorial partners to keep in step with evolving strategies for maternity care, primary health care, women's health and newborn health

OMCEP examined governance models from other provinces and other sectors. We believe that the Office of Maternal and Newborn Health should be established within Government, with strong links through a provincial advisory committee to regional maternity care networks and with the authority to work with LHINs to develop regional maternity care plans that advance a provincial strategy based on the principles indicated in this report.

A maternity care strategy for Ontario would maintain linkages with women's and reproductive health care initiatives as well as later infant, child and adolescent health initiatives.

To give the Office the authority it needs to fulfill its mandate, the Government should consider:

- Issuing a policy directive, requiring all ministries to collaborate with the Office to strengthen maternity care and improve health outcomes
- Making maternity care a key government priority along with Wait Times, Primary Care and System Renewal
- Allocating resources to the Office that can be used to enhance the quality and consistency of maternity care as required
- Requiring each LHIN to identify a lead person responsible for maternity care
- Situating the Office so it can work at the Deputy Minister level, with matrix reporting to those multiple Assistant Deputy Ministers that administer programs along the maternal newborn care continuum
- Including a specific annual budget process for maternity care programs within the Government's annual budget process

Program, Provider and Service Links to Maternity Care:

Aboriginal Health Services
Academic Preparation and Continuing Education Programs
Bereavement Programs
Chronic Disease Management Strategies
Community Health Centres
Criticall
Emergency Preparedness
Family Health Teams
Fetal Surveillance Programs
Health Human Resources Planning
Hospitals
Infant Health Programs
Information Management
International Credentialing and Re-skilling Programs
Lab and Diagnostic Imaging Services
Local Health Integration Networks
Mental Health Programs/Providers
Physicians including: Family Practice, Obstetrics, Anaesthesia, Paediatrics
Primary Health Care Renewal
Provider/Alternate Funding and Incentive Programs
Public Health
Registered Midwives
Registered Nurses (incl. Extended Class)
Regulatory Programs
Respiratory Therapists
Population Health Research
Telemedicine and E-health Initiatives
Transport – land and air
Under-serviced Area Program
Women's Health

Working with Local Health Integration Networks

The Office would work directly with the provincial advisory committee, regional maternity care networks and LHINs to:

- identify planning areas for maternity care services that take into account LHIN boundaries, local maternity care needs, and existing maternity referral patterns
- share planning information and develop annual regional maternity care plans including where services are needed to maintain access to care for Ontarians
- identify effective ways to engage women and families in planning maternity services
- seek and implement creative solutions to access, human resources and service delivery issues at the local level according to the guiding principles listed in this report
- encourage innovative, high-quality service delivery models and collaborative care
- develop regional assessments and concrete plans to improve the quality, consistency and comprehensiveness of maternity care services, and achieve provincial targets and goals

Building Capacity based on Regional Maternity Care Networks

In three regions of Ontario, perinatal health programs are already well positioned to play an active role in the ongoing development of a provincial maternity care strategy. The South-west Ontario Perinatal Partnership, the Greater Toronto Area Child Health Network, and the Perinatal Partnership Program of Eastern and Southeastern Ontario are all effective networks involving hospitals, providers, educational sites and some community programs involved with maternity care. An established nursing network, (CWONN, Central West Obstetric and Neonatal Nurses) also exists in the Central South region. With support, expanded representation and mandates, these groups could play a leadership role in the LHINs' maternity care planning activities.

To effectively advise on the full spectrum of maternity care, the Office of Maternal Newborn Health would work with these legacy networks to develop consistent terms of reference, expanded maternity care representation and operational plans reflecting a wider range of maternity care issues. The Office would share lessons learned from these networks in the establishment of new networks in the other areas of the province.

We recommend that each regional network reflect the composition of provincial maternity care programs, including full inter-professional primary and acute care representation and women themselves. The province should provide each regional network with sufficient resources to coordinate maternity care services and to collect, analyze and interpret local and provincial data to facilitate continuous improvement. The Office of Maternal Newborn Health would increasingly depend on regional networks and LHINs to conduct local and regional maternity care planning and funding activities as an inherent part of the province's New Directions strategy.

Regional Maternity Care Networks would:

- advise LHINs on regional access to primary, acute and supportive maternity care programs
- assist hospitals, health care provider teams and public health agencies to improve collaboration and consider and implement innovative maternity care service delivery models
- ensure ongoing integration of primary, acute and supportive care elements of the maternity care system
- ensure consistency of administration and reporting of maternity care data
- disseminate research and information among maternity care programs and providers to encourage best practice
- collect and consider consumer satisfaction information
- advise the LHINs and the Office of Maternal Newborn Health on barriers to optimal functioning of the maternity care system

Representatives of the regional maternity care networks would be appointed to the Maternity Care Provincial Advisory Committee, which would work directly with the Office of Maternal Newborn Health.

A Focus for Advice – the Maternity Care Provincial Advisory Committee

OMCEP recommends that selected representatives of the proposed regional maternity care networks be appointed to a provincial advisory committee to provide both strategic and service level advice to the Office of Maternal and Newborn Health. The advisory committee would draw upon the skills of a regionally and professionally representative group of academic leaders, data experts, LHINs, maternity care providers, professional association representatives, public health care providers, regulators and women to recommend solutions to maternity care sector issues on a quarterly basis. The committee's terms of reference would reflect the guiding principles listed throughout this report and the evolving provincial maternity care framework.

We recommend that the Office of Maternal and Newborn Health work with the Ontario Provincial Perinatal Partnership (OPPP) as a foundation for development of the advisory committee and its subcommittee structures, linking the provincial committee and the emerging regional networks.

Figure 6

Placeholder for Diagram

Provincial Planning for Maternity Care

Since many of the LHINs already share populations and depend on each other for maternity care resources, it may be counterproductive for each LHIN to develop its own maternity care plans. Instead, OMCEP recommends a planning system, which would complement the LHIN boundaries and would include public health units. The objective will be to enable areas of the province to integrate and equitably share limited maternity service resources, reducing competition and recruitment pressures between LHINs. A chart of OMCEP's proposed maternity care regions is below, followed by a map outlining the boundaries.

What Would a Regional Maternity Care Plan Look Like?

Each plan will be based on the concept of **an essential grouping of primary care services**, including birthing services, that must be available in as many communities as possible and more **centralized secondary and tertiary institutional services** as close to home as possible.

LHINs would be expected to inventory their ability to provide maternity care and to share and/or purchase services from each other as equitable budgets for maternity care are developed in all regions of Ontario.

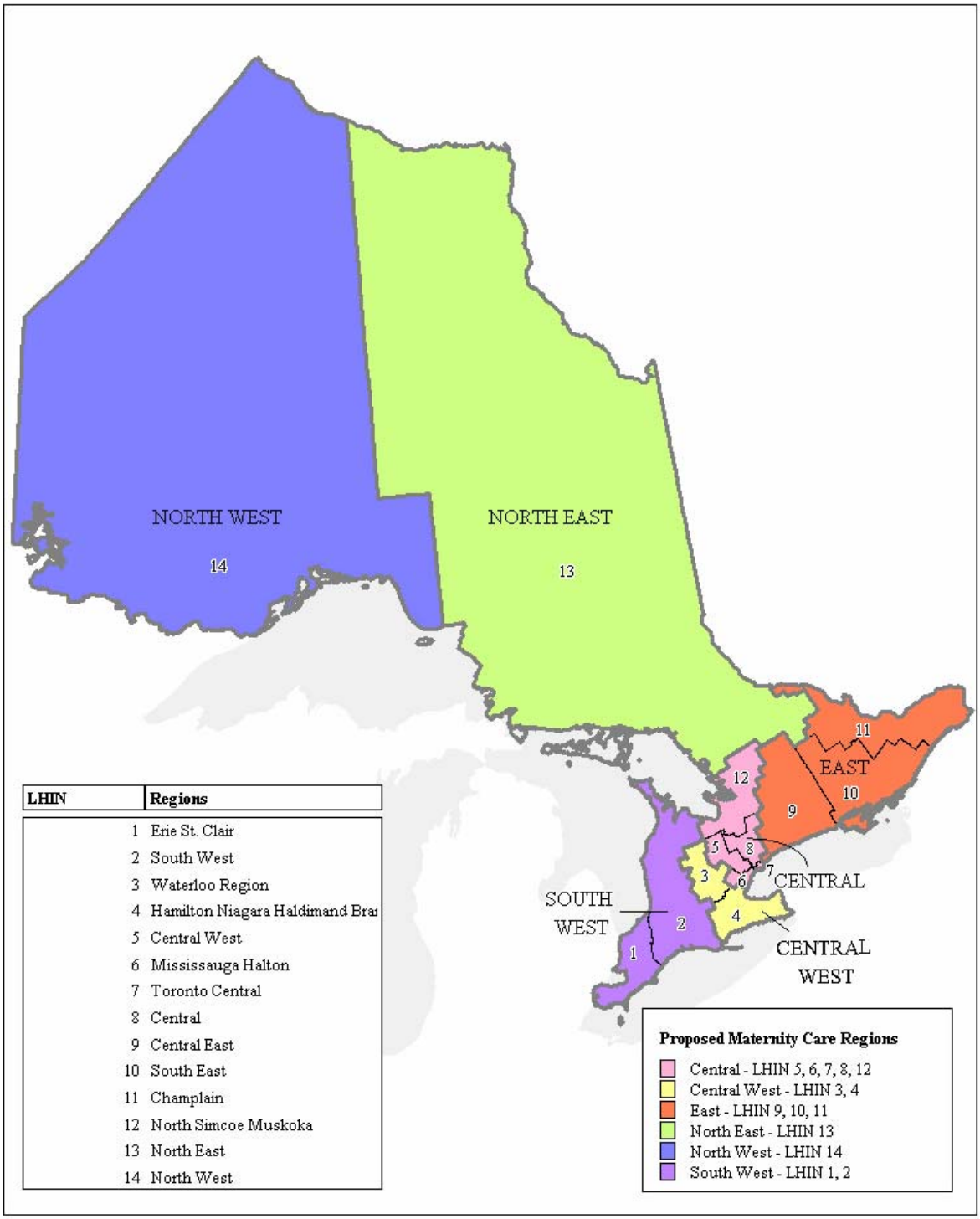
LHINs and Maternity Care Planning Regions

The proposed new maternity care regions will reflect existing maternity care referral patterns through the primary to tertiary care continuum. Of course, boundaries will be permeable for special situations or community considerations where individual cases require expertise in other regions. Each proposed region contains an academic health science centre and a medical school. Three of the six regions have a baccalaureate midwifery education program. Nursing and advanced practice nursing programs are present in all regions, facilitating efficient use of clinical training opportunities as well as recruitment and retention incentives.

Figure 7

LHIN Number	Co-ordination Location	Maternity Care Region
14	Thunder Bay	North West
13	Sudbury	North East
5,6,7,8,12	Toronto	Central (incl. Toronto)
3,4	Hamilton	Central West
9,10,11	Ottawa/Kingston	East
1,2	London	South West

Figure 8 - LHINs and Proposed Maternity Care Regions



Source: Ontario Midwifery Program April 2006

Priorities for an Ontario Maternity Care Strategy

Other sections of this report provide detailed discussion of the individual solutions that OMCEP proposes for the numerous elements of the maternity care system.

Below are the Panel's uppermost priorities for the provincial strategy implemented through the **Office of Maternal and Newborn Health**:

1. Stabilize the maternity care system while the province develops a strategy for future maternity care service developments
2. Incorporate women, families and providers in the planning process at all levels
3. Conduct a consumer and health care provider information campaign about available maternity care services and promote physiologic pregnancy, labour and birth
4. Develop a minimum standard set of local, regional and provincially available maternity services
5. Expand innovative service delivery models
6. Conduct HR planning - including population health needs-based planning, recruitment, retention and succession for the maternity care sector
7. Maximize capacity of education programs including: require all medical, midwifery and nursing programs to offer inter-professional maternity care education opportunities; effective recruitment into family practice maternity care and obstetric residency positions; and increase midwife entrant class sizes to meet demand for services
8. Equitably fund and expand clinical placements for midwifery, family medicine, nursing and obstetrics, including residency and fellowship positions
9. Harmonize inter-professional funding, regulatory and liability protection systems
10. Establish a provincial integration task force to address current barriers to inter-professional care
11. Build LHIN, regional network public health unit advisory capacity to ensure delivery of population-based maternity care services and sector oversight
12. Integrate maternity care data across divisions and ministries
13. Increase accountability of service providers, agencies, programs

Stabilizing the System

There are clear signs of stress and instability in Ontario's maternity care services. The panel heard from representatives of communities whose maternity care services have closed, or remain at risk of closure or cutback; we heard urgent closures or temporary suspensions of services without due consideration to the long-term impact on maternity care access for local or neighbouring communities. There is a clear need for immediate measures to stabilize the system, followed by systematic medium and longer term actions to avoid unrecoverable losses of service.

In order to stabilize women's access to maternity care while a provincial framework is confirmed, we recommend:

That the Government of Ontario place an immediate moratorium on birthing unit closures at hospitals and relieve pressures on affected institutions whose maternity care programs are at risk of closure or cutback.

The panel felt strongly that this moratorium must extend to the full continuum of maternity care services. In addition to intrapartum (birth) care providers and services, it should apply to community and institutional staff and programs including: prenatal and postnatal care and education, obstetrical anaesthesia services, nutrition counselling, lab and imaging services, social work and mental health programs, lactation support, family bereavement programs, neonatal care and maternal-newborn public health programs. The moratorium would be lifted in conjunction with the implementation of a provincial and regional maternity care plan that ensures appropriate access for Ontarians to essential maternity care services including safe access to local maternity care. Support for innovative and inter-disciplinary solutions should come from all levels of the system.

Partnering with Women

According to our vision, women's empowerment in personal and policy decision-making around maternity care will be an integral part of Ontario's maternity care model. A woman-centred maternity care system can only exist with the active participation of women in the planning, delivery, monitoring and evaluation of maternity care services at the local, regional and provincial levels. Women who have used the maternity care system will be represented in all major policy, planning and evaluation initiatives of that system.

Therefore OMCEP recommends:

That government, health systems, institutions and providers of maternity care actively seek and incorporate the input of women and families in all levels of maternity policy, planning and service delivery, including at the provincial, regional, institutional and provider levels.

Educational Campaign

To encourage cooperation and participation at all levels of the maternity care system as transformation progresses we would recommend **a multi-faceted and ongoing educational campaign directed at users and providers of the system**.

The campaign's objectives would include:

- promoting pregnancy and birth as a healthy physiological process
- providing improved access to information on lifestyle choices for women and families of childbearing age
- providing standard inter-disciplinary information regarding pregnancy to all pregnant women and families on local care provider and service options so they can make informed choices about provider, service and birthplace
- providing improved access to information on high-risk medical services, for women and families in need of these services

- providing educational information to providers on the scope and role of all maternity care providers[14]
- highlighting issues such as evidence-based care options, professional retention, collaboration and opportunities for inter-professional practice
- promoting maternity care to young Ontarians and health science program students as a positive career choice
- promoting an understanding among maternity care providers, insurers and the public that places perinatal risks in perspective as "normal life events with associated uncertainties".[15] This approach promotes realistic expectations of the inherent clinical risk associated with birth, including infrequent but potentially serious consequences. The campaign would also highlight evidence that supports lowered incidence of claims, when there is good communication and collaborative, respectful practice by members of the care team.[16]

Building the Service Plan

Below is a description of the essential maternity care services that OMCEP proposes become the basis for population-based planning:

Essential Maternity Care Services for all Communities

Early and Regular Prenatal Care
Laboratory Services for Primary Maternity Care
Postnatal Care and Lactation Support
Prenatal Education
Birth Services for Healthy Women – primary hospital or home birth service in all communities more than 30-60 minutes/20km from the nearest community with birthing services and/or with more than 20 births per year[h] (optional anaesthesia and/or surgical capacity)
Public Health Services
Well-Woman and Newborn Care
Bereavement Services
Timely Stabilization and Transport to/from Additional Services
Funded Interpretation Services

Centralized Maternity Care Services

In addition to the above widely available services, Regional Plans will align with the provincial framework to determine in which communities more specialized services should be available to provide coordinated access to quality complex care as close to home as possible:

Access to Specialized Prenatal Care for Women with Pregnancy Complications or Risk Factors
Hospital Birthing Services – Level I (including anaesthesia and surgery), Level II and III services
Secondary and Tertiary Postnatal and Newborn Care
Lab and Diagnostic Imaging
Perinatal Psychiatry and Mental Health Services

In addition to the essential services provided the Office should develop strategies that encourage and support innovative models of care provision, especially those that foster inter-professional models of care and that provide services to areas with threatened or absent primary care obstetrical services.

[h] The safety of low volume obstetric services has been documented elsewhere in this report. We suggest volumes of 20 as pragmatically possible with a family health team or midwifery practice which has an extended role, based on some of the established models detailed in the Models Chapter and in Appendix G of this report.

Human Resource Development and Educational Strategies

The Office of Maternal and Newborn Health should be mandated to provide leadership – working with communities – to resolve barriers to maternity care, thereby improving evidence-based practice, access to care and effective use of all available maternity care providers. In many cases, this will involve working with hospitals and their existing departments to adjust policies to be more inclusive of the newer members of the Ontario maternity care team: registered midwives and registered nurse practitioners.

Strategies to reduce barriers will involve:

- alleviating credentialing restrictions that limit the number of midwives with hospital privileges
- alleviating restrictions on scopes of practice for nurse practitioners and midwives including seamless consultation and referral with specialists
- establishing and improving communication and dispute resolution processes
- advising hospitals on the establishment of Departments of Midwifery and Professional Advisory Committees
- advising hospitals on liability concerns related to inter-professional care and any concerns about the responsibility associated with being the 'most responsible care provider'
- supporting internationally-prepared maternity care providers (including physicians, midwives and nurses) to integrate into the maternity care system and maximize their contributions

In addition, through the proposed provincial advisory committee, the Office of Maternal and Newborn Health would engage maternity care educators (medical, midwifery and nursing schools), professional associations and experts to determine joint provincial policies on:

- Maximizing the contribution that all existing maternity care providers make to the system
- Inter-professional education curricula for maternity care providers
- Inter-professional clinical education opportunities, including demonstration projects for innovative educational models, including Centres of Excellence for Normal Birth
- Equitable, non-traditional and non-competitive remuneration models for physician, midwife and nursing maternity care providers
- Performance measures for the maternity care system
- Clinical guideline development for inter-professional maternity care and normal birth

Integration and Collection of Data

The management and ongoing evaluation of Ontario's Maternity Care system will require a substantial commitment to data collection, analysis, information management and maintenance of the evaluation system. Steps are already underway in the ministry and

regional perinatal networks to substantially improve Ontario's current data collection and evaluation systems.

Data currently available for the evaluation and monitoring of the maternity care system have generally not been developed for the purpose of setting performance indicators that are timely, accurate and linkable to other data bases. Privacy issues, associated with data collection using or not using a unique identifier, need to be clarified. Our assessment of existing data sources is that, despite the presence of several good sources, there are important gaps in the available data on care, services, cost and experiences. Data from existing sources are often two to four years old, and Ontario is limited in its ability to link data on cost, care and services, and women's experiences for many maternity care components.

Creating new data sources for the purpose of evaluating Ontario's maternity care system has the advantage of allowing the design of data collection systems to provide exactly the information required for evaluation and indicator development. It is also true that creating new data sources would require significant human and financial resources. To supplement the available data on maternity care, the panel recommends that the proposed Office of Maternity and Newborn Health evaluate additional data reflecting the perspectives of maternity care providers and educators at the college and university level. This should include a regular maternity care provider work/life survey; an education program director survey and a hospital survey on opportunities and challenges for optimal system functioning.

In order to determine the appropriate participants, activities and outcomes that should be measured, OMCEP developed the beginnings of an evaluation plan for maternity care in Ontario. Below is a description of the plan, with further information following in Appendix E.

System Evaluation

For Government to implement and rely on a maternity care strategy, the system must focus on improvements to maternity care monitoring and evaluation for a sustained period to accumulate sufficient data for trend analysis. To this end OMCEP's recommendation in this area is a comprehensive one:

We recommend that Government allocate stable and adequate resources to measure and report on the provision of maternity care in Ontario according to the short, medium and long-term outcomes found in this report.

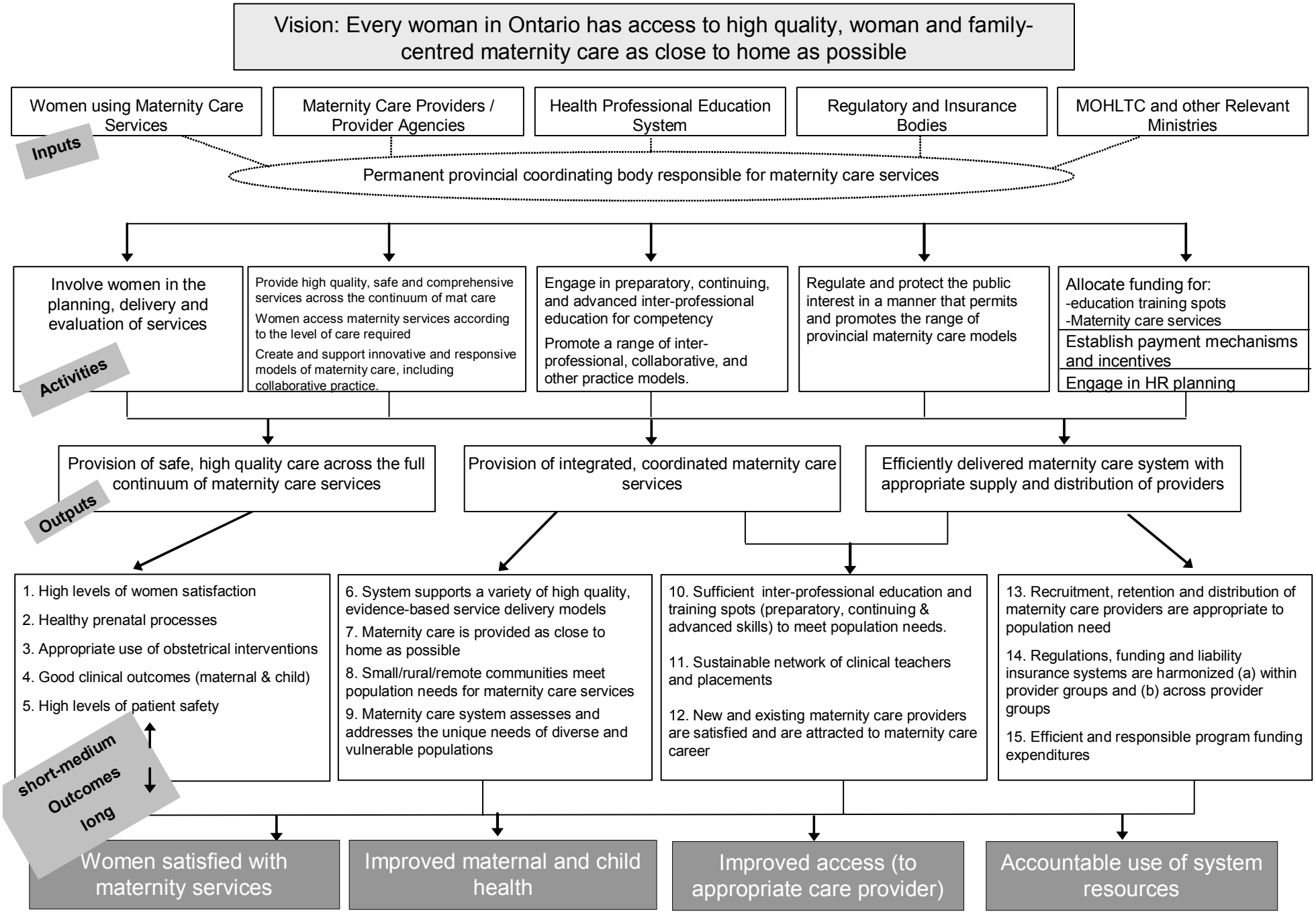
Based on OMCEP's scan of existing indicators in the area of maternity care, we propose a set of performance measures that might be used to monitor and evaluate Ontario's maternity care system and provide ongoing feedback as to whether the system is meeting its objectives. Consistent with OMCEP's vision for maternity care, the proposed indicators reflect the entire continuum of maternity care from pre-pregnancy counseling through to postpartum care.

Identification of a meaningful set of performance indicators requires knowledge of a program's goals and consideration of the steps or processes involved in achieving program objectives. Program logic models are often used to ensure performance

indicators are consistent with program goals. Logic models that are used in program evaluation use an outcome approach and (1) provide a visual roadmap of what a program does and why, (2) demonstrate the intended linkages and relationships within a program, (3) display links between specific program activities and their outcomes, and (4) provide a basis for developing indicators that can be used to demonstrate how a program is performing.

OMCEP developed Figure 9, the Program Logic Model, below as the basis for an evaluation plan for Ontario maternity care. We recommend that it be used to confirm an ongoing evaluation plan to measure on an ongoing basis Ontario's achievement of the short, medium and long-term outcomes shown below.

Figure 9


Vision: Every woman in Ontario has access to high quality, woman and family-centred maternity care as close to home as possible
Women using Maternity Care Services
Maternity Care Providers / Provider Agencies
Health Professional Education System
Regulatory and Insurance Bodies
MOHLTC and other Relevant Ministries
Inputs
Permanent provincial coordinating body responsible for maternity care services
Involve women in the planning, delivery and evaluation of services
Provide high quality, safe and comprehensive services across the continuum of mat care
Women access maternity services according to the level of care required
Create and support innovative and responsive models of maternity care, including collaborative practice.
Engage in preparatory, continuing, and advanced inter-professional education for competency
Promote a range of inter-professional, collaborative, and other practice models.
Regulate and protect the public interest in a manner that permits and promotes the range of provincial maternity care models
Allocate funding for:
-education training spots
-Maternity care services
Establish payment mechanisms and incentives
Engage in HR planning
Activities
Provision of safe, high quality care across the full continuum of maternity care services
Provision of integrated, coordinated maternity care services
Efficiently delivered maternity care system with appropriate supply and distribution of providers
Outputs
1. High levels of women satisfaction
2. Healthy prenatal processes
3. Appropriate use of obstetrical interventions
4. Good clinical outcomes (maternal & child)
5. High levels of patient safety
6. System supports a variety of high quality, evidence-based service delivery models
7. Maternity care is provided as close to home as possible
8. Small/rural/remote communities meet population needs for maternity care services
9. Maternity care system assesses and addresses the unique needs of diverse and vulnerable populations
10. Sufficient inter-professional education and training spots (preparatory, continuing & advanced skills) to meet population needs.
11. Sustainable network of clinical teachers and placements
12. New and existing maternity care providers are satisfied and are attracted to maternity care career
13. Recruitment, retention and distribution of maternity care providers are appropriate to population need
14. Regulations, funding and liability insurance systems are harmonized (a) within provider groups and (b) across provider groups
15. Efficient and responsible program funding expenditures
short-medium
Outcomes
long
Women satisfied with maternity services
Improved maternal and child health
Improved access (to appropriate care provider)
Accountable use of system resources

The logic model starts with the Program vision that "Every woman in Ontario has access to high quality, woman and family-centred maternity care as close to home as possible". Next the inputs to the program are defined including women receiving maternity care services, providers and provider agencies, the health professional education system, regulatory and insurance bodies, and the relevant government ministries. The logic model then outlines the activities in which the program engages and the outputs (reflecting the size or scope of the services delivered or provided by the program).

Finally, a series of specific and measurable outcomes are identified reflecting changes in attitudes, behaviours and knowledge, skills, etc., that are expected to result from program activities. Short-medium term outcomes are within the control of the program and are expected to occur with 1-4 years. Long-term outcomes reflect more fundamental changes in communities or systems occurring within 5-10 years that cannot be solely attributed to the program. Accordingly, short-medium term outcomes drive the selection of performance indicators, as they are more appropriate for monitoring whether the program is achieving its objectives.

For more specific review of the suggested indicators and the utilization of a logic model please see Appendix E.

1. Canadian Institute for Health Information. Giving birth in Canada: the costs. 2006.

2. Public Health Agency of Canada. Make every mother and child count: report on maternal and child health in Canada. 2005 Apr 7.

3. Mustard JF, McCain MN, Bertrand J. Changing beliefs to change policy: the early years study. ISUMA 2000 Autumn;1(2):76-9.

4. Society of Obstetricians and Gynaecologists. Impact of inadequate prenatal care on neonatal mortality will rise in Canada [media advisory]. Quebec; 2005 Jun 20. Available from: http://www.sogc.org

5. Wang EEL. Breastfeeding. Canadian guide to clinical preventive health care. Ottawa; Health Canada, 1994; 84-98.

6. Anderson JW, Johnstone BM, Remley DT Breastfeeding and cognitive development: a meta-analysis. Am J Clin Nutr 1999;70(4):525-35.

7. Dietz WH. Breastfeeding may help prevent childhood obesity. JAMA 2001;285(19):2506-7.

8. Benoit C, Carroll D, Kaufert P. Moving in the right direction? regionalizing maternity care services in British Columbia, Canada. Prepared for: The National Network on Environments and Women's Health. NNEWH Working Paper Series #13; 2001 Mar 1.

9. Yu VHU, Dunn PM. Development of regionalized perinatal care. Seminars in Neonatology 2004 Apr;9(2):89-97.

10. Alberta Perinatal Health Program. Website: http://www.aphp.ca

11. British Columbia Reproductive Care Program. Website: http://www.rcp.gov.bc.ca

12. Reproductive Care Program of Nova Scotia. Website: http://rcp.nshealth.ca

13. Prince Edward Island Reproductive Health Programme. Available from: http://www.gov.pe.ca/infopei/onelisting.php3?number=20616

14. Ministry of Health and Long-Term Care. Family health teams: Guide to interdisciplinary team roles and responsibilities. Ontario; 2005 Jul 4. Available from: http://www.health.gov.on.ca

15. The future of maternity and newborn care in Canada: principles and recommendations. The Future of Maternity Care in Canada; London, Ontario; 2000 Nov 24-25.

16. Association of Ontario Health Centres. Relative physician liability between provider-based and community-based family health teams [legal opinion]. 2005 Feb 3.

Human Resources Planning and Education for Maternity Care in Ontario

At the centre of concerns about the maternity care crisis is the need for integrated health human resource (HHR) planning for maternity care. Planning needs to take into account not only overall numbers, but also mix and distribution of care providers, patterns of practice and location of institutional sites. The pressures created by the trends documented in Maternity Care Now have to some extent been ameliorated by a decline in the birth rate, a trend that is expected to reverse over the next twenty years. The steady decline in family physician-attended births has been addressed in some communities by obstetricians' willingness to take an increased workload and by consolidation of services into fewer hospital sites.[1] OMCEP agrees with the many reviews at both the provincial and national level,[2-4] which have concluded that this compensation for the decline in primary care providers is not sustainable. For Ontario to continue to provide excellent maternity care and prevent deterioration of the system, we need to increase the number of practitioners who choose to provide maternity care, and plan for an appropriate mix and distribution of providers and hospital sites that offer maternity care. OMCEP strongly recommends an approach to HHR and institutional distribution, which can support our vision and principles for maternity care in Ontario.

OMCEP's research and consultations indicate that an integrated, complex system like maternity care needs an ongoing system-wide approach to planning. A coordinated health human resources (HHR) strategy for maternity care would take into account the multi-professional pool of Ontario providers,[5] (rather than addressing each provider group in isolation) and the geographic distribution of access to service. In this chapter we review HHR projections provided to OMCEP by the Ministry of Health and Long-Term Care in May 2006 and make recommendations for HHR planning for maternity care.

OMCEP's recommends a process for maternity care HHR planning of system wide planning based on several premises:

- That access to intrapartum care providers across the province as close to home as possible is one of the key challenges, recognizing that there are needs across the maternity care continuum.
- That immediate action is needed by government, health professional bodies, educators and provider groups to ensure that the capacity of all care provider groups is maximized.
- That, given our current supply and distribution of maternity care providers, and current Ministry of Health and Long-Term Care initiatives to make obstetrics-gynaecology a priority program, obstetrician specialists will continue to provide the largest proportion of primary level maternity care in Ontario, as well as services for women with complications and risk factors, for the foreseeable future.
- That care to healthy women and babies, including intrapartum care, is an important part of the primary health care system provided by family physicians and midwives, and should be supported to recover and grow.

- That although maternity care nurses are the "foundation of the system"[6] and shortages appear to be threatening the sustainability of services in some communities, data is currently lacking to plan for an adequate supply of maternity nurses. However, planning for an increased supply of maternity care nurses should begin immediately to ensure a recovering pool of nurses, including nurses and nurse practitioners playing important roles in multi and inter-professional models of care.

> "Nurse shortage cracking maternity care foundation. . . ."
>
> Medical Post Dec 2000[7]

- That women with high-risk pregnancies require an adequate supply of specialist obstetricians, and other maternal-fetal medicine and neonatal specialists as well as services such as anaesthesia, diagnostic imaging, laboratory and other medical services. One of the goals of regional planning should be to improve access to these specialty services.
- That Ontarians need a sufficient distribution of hospitals offering both low and high-risk services and additional access points where care providers can offer services where the population needs them.
- That the subspecialties of maternal fetal medicine, uro-gynaecology, oncology and reproductive technologies will continue to offer another career option for general obstetricians.
- That planning must take into account the full range of care providers including not only intrapartum care providers but anaesthesia providers, lab services, radiologists, respiratory therapists, lactation consultants, etc.
- That comprehensive maternity care planning should include and facilitate care providers working to their full scopes of practice, inter-professional care teams and excellent collaborative relationships.
- That increases to provider pools take time to plan and implement.
- That a long-term incremental approach to change (over 20 years) is needed to maximize stability and facilitate positive relationships.

OMCEP's recommendations for future human resource needs are based on an increase in models where care providers working in inter-professional teams, as well as those working in current models with a group from their own profession. This approach is consistent with Ontario's new health system directions towards inter-professional primary care and integration.[8]

Planning for Intrapartum Care Providers

Human resource planning requires accurate data about the many factors described in this chapter that influence maternity care provider choices. Ontario has recently taken important steps towards improving its perinatal data and this initiative makes an important contribution to a provincial strategy and to improved HHR planning in future. OMCEP believes however that immediate action is needed based on the best evidence we currently have. Our recommendations begin a process of setting targets and of formative evaluation of maternity HHR strategies.

OMCEP interprets the Ministry of Finance projected increase in birth numbers (an additional 27, 000 births per year), combined with practice trends,[9] to mean that we need ***more of all care providers*** and improved collaboration between care provider groups. This position has been strongly supported by the Society of Obstetricians and Gynecologists of Canada and is the basis for three current Primary Health Care Transition Fund projects (see Appendix H for summaries) at the provincial and national levels.[2,3,10-13]

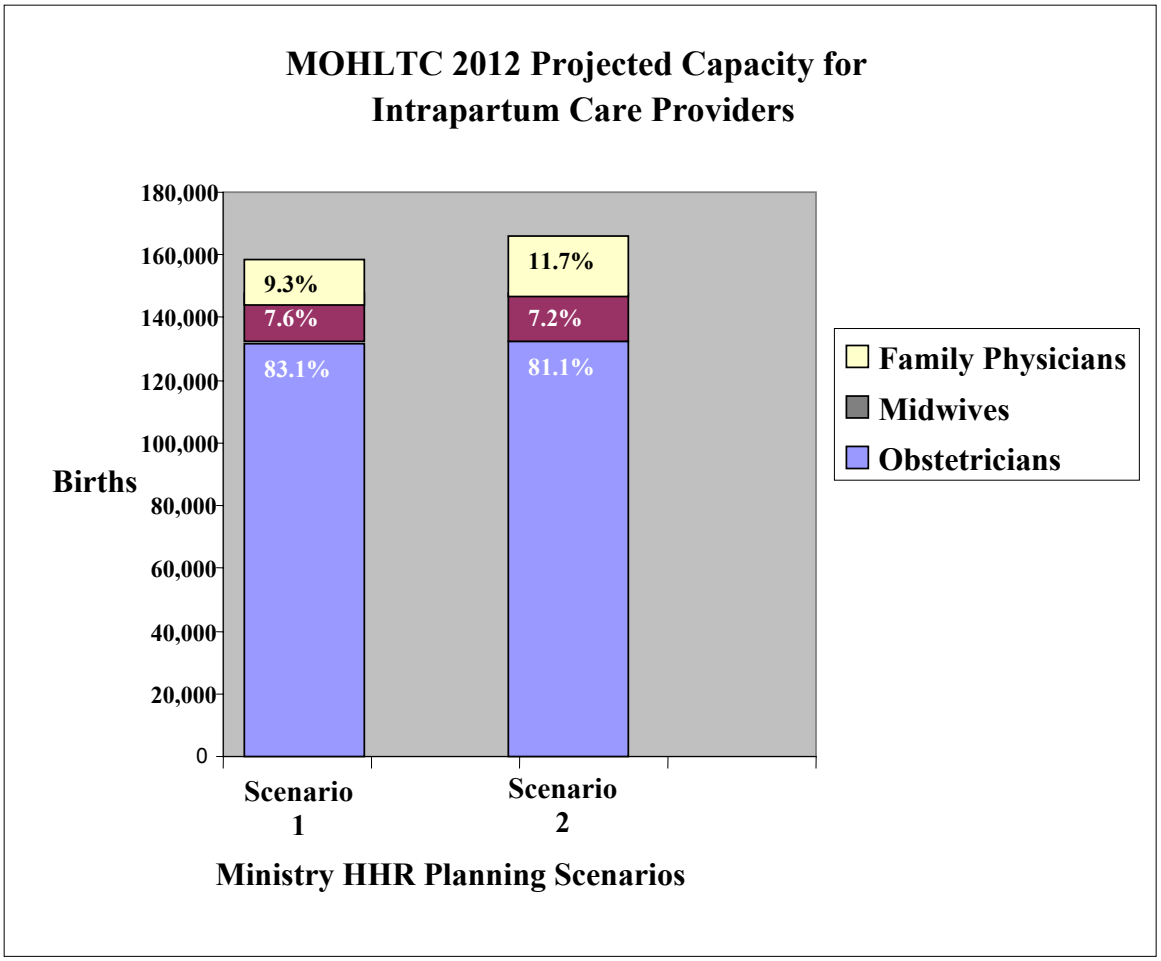
The Ministry of Health and Long-Term Care has prioritized improved HHR planning, appointing Canada's only Assistant Deputy Minister for HHR, and announcing numerous important initiatives to address provider shortages, distribution issues and in support of establishing a mix of care providers and inter-disciplinary models of care and education.

Ontario's Current Directions for Maternity Care Human Resources Planning

Recently announced increases in the entrant class sizes of medicine and nursing and an increase in International Medical Graduate (IMG) positions and family medicine residency positions will contribute to addressing physician and nursing shortages in maternity care. However, it is important to acknowledge that increased undergraduate medical or nursing class size does not automatically result in increased care providers choosing to provide intrapartum maternity care. Current ministry identification of obstetrics-gynecology as a priority specialty (eligible for accelerated expansion) may assist in reaching goals for an increase in obstetrical specialists. Midwifery program entrant class sizes also relate directly to producing intrapartum care providers but current capacity is limited and demand exceeds available care providers.[14] A proposal to expand the Midwifery Education Program invited by the Ministry of Colleges, Training and Universities is awaiting a decision. The chart below (Figure 10) illustrates ministry projections of capacity for intrapartum maternity care activity by physicians and midwives to 2012, based on projected increases to the number of family physician and obstetrician graduates and a stable number of midwifery graduates (also see Appendix K for more description of the projection). Scenario 1 assumes an increased pool of family physicians and obstetricians with a declining proportion of both choosing intrapartum care. Scenario 2 is based on an increased pool of obstetricians and family physicians with a stable percentage choosing intrapartum care. In both scenarios, using average volumes for 2005, the Ministry projects excess capacity.

Figure 10 - Ministry 2012 Projected Capacity for Intrapartum Maternity Care Providers

The below scenarios are based on the assumption of 144,000 births in Ontario in 2012.



OMCEP has several concerns regarding the above projections. Our research indicates that estimates of total numbers of providers expected in all groups may be overestimated, given recent trends in retirement and practice patterns.[1] The average volumes of care providers may also be over estimated for future providers, as OMCEP's research and work for the Babies Can't Wait project indicates that the cohort of physicians with high volume style of practice is in the 45-65 age group, and that they will be succeeded by practitioners with lower activity preferences.[1] Ministry of Health and Long-Term Care data suggest that over 20% of obstetricians in Ontario attend over 300 births per year, and we are aware that in some communities single providers attend 500-600 births. When high volume providers retire large gaps appear and may require recruitment of multiple providers in order to sustain services. The Canadian context also has to be considered. It is expected that 35% of obstetricians in Canada will retire in the next 5-10 years.[15]

Changes in provider practice patterns in maternity care are also consistent with broader trends in provider practice patterns.[8,16]

> "Younger physicians report they are not willing to continue the high workload of their predecessors. They are spending less time on direct patient care than their counterparts did 20 years ago. They want more balance in their lives and more time for family and non-work related priorities. Female physicians have led the way in promoting the importance of work life balance and now that approximately half[16] of medical school graduates are women, future practitioners will not provide as much service to as many patients as their predecessors."
>
> Health Council of Canada[16]

In our analysis, the Ministry projections of excess capacity underestimate the demand for care provider attendance at births, as the need for shared care by more than one physician or a physician-midwife team at a proportion of births has not been taken into account. OMCEP's analysis is that currently up to 35% of family physician-attended[1] and approximately 25% of midwife-attended births also involve specialist attendance. This is an area of practice confounded by issues of professional courtesy, payment and non-regulatory restrictions on scope of practice as described in this report's chapter on Regulation, Liability Insurance and Payment, and requires further research. Rates of family physician births also attended by obstetricians have increased steadily over the last decade. An international rate of intrapartum transfer to obstetricians from midwives is reported by the World Health Organization to be about 20%.[17] Birth numbers used in HR projections need to take into account 20-35% of family physician and midwife births involve obstetrician attendance as well, the proportion of which depends on the extent to which midwives and family physicians are working to their full scope.

In OMCEP's analysis, all of the above considerations, combined with the confounding factors such as geography, distribution and demand acknowledged in the Appendix I, mean that it is unlikely excess capacity will be achieved.

Another potential impact relates to the possibility for a continuing decrease in the proportion of births in Ontario attended by family physicians and a leveling off or decline in the growth of midwifery. OMCEP recommends that all care providers groups be increased and that Ontario's prioritization of 'obstetrics-gynaecology', currently being applied to obstetrics specialists and family physicians, be expanded to include midwives and nurses, as part of the government's platform to improve access to primary maternity care.

Planning for Other Provider Groups Essential to Maternity Care

Ministry projections concentrate on obstetrician, family physician and midwife intrapartum maternity care providers. OMCEP has described elsewhere in this report the importance of considering the team of maternity care providers essential to maintain services.

Nurses: Nurses are essential intrapartum care providers. As noted earlier in the report, despite the fact that we currently lack the necessary data to assist us in developing a health human resource strategy for maternity care nursing; there are many factors, which predict ongoing shortages. The monitoring and collection of maternity care nursing data must be an important priority of a provincial maternity care unit. Nurses will continue to specialize in intrapartum assessment and labour support, and facilitate care for women and their newborns within hospital settings, including lactation support and other services in the immediate postpartum period. Nurses are involved in care provision at every physician-attended birth. In OMCEP's projections, we see nurses, nurse practitioners and midwives increasingly working together, and with physician colleagues, as part of the growing proportion of services delivered within inter-professional intrapartum models. Increasing the number of nurses who choose maternity care is critical.

Advanced Nursing Practice: OMCEP's projections rely on further expansion and integration of primary and acute care nurse practitioners into Ontario's maternity care system, with these providers utilized to the full extent of their scope of practice in institutional and community settings across the province. OMCEP recommends improved use of nurse practitioners as team members for prenatal, postpartum and newborn care, consistent with the Canadian Nurses Association's 2005 statement on advanced practice nursing. We are not proposing nurse practitioners as intrapartum most responsible care providers. We are proposing to facilitate career change and dual qualification for both midwives and nurses as described in the upcoming Education Chapter of this report.

Anaesthesiologists and GP-Anaesthetists: Sixty-nine percent[18] of women giving birth in Ontario hospitals currently receive regional anaesthesia during labour and childbirth. Anaesthesiologists in secondary and tertiary institutions provide the vast majority of these services with a small percentage offered by family physician-anaesthetists. OMCEP recommends improved coordination of access to anaesthesia services in Ontario as part of a provincial maternity care strategy (See Appendix C). GP-anaesthetists working in rural communities require improved access to educational opportunities and strong linkages with high volume obstetrical anaesthesia practitioners to improve and maintain their skills. Given the models that exist in the United States for nurse anaesthetists along with the current shortages of anaesthesiologists, consideration of an advanced practice nursing role may be appropriate.[19]

The sustainability of current models and the development of inter-professional intrapartum care models in Ontario hinges on increased education, role acknowledgement, acceptance, collaboration and seamless consultation between anaesthesia staff and **all** intrapartum primary caregivers

Ontario's Future Mix of Maternity Care Providers

Strengthening Primary Maternity Care

As described in Maternity Care Now, the traditional primary care providers of maternity care, family physicians, have come to play an increasingly minimal role in maternity care. Midwives attend a growing number of births but a small minority of the overall births in the province. This is in contrast to most other provinces in Canada where family physicians play a much more central role [20] and to the many countries in the world where midwives attend the majority of births.[21-24] In Ontario, obstetricians will continue to attend the majority of both straight forward and complicated pregnancies and births in the province for the foreseeable future. OMCEP applauds the Ministry of Health and Long-Term Care for its proactive planning to ensure an adequate supply of obstetrician-gynaecologists for the province. However, without a concurrent increase in other care provider groups, this initiative is out of step with policy directions focused on primary care, inter-disciplinarity, care close to home and patient/client centered care.[25] Many reviews at the provincial and national stakeholder level have expressed support for policies which work to maximize the contributions of both family practice maternity care and midwifery.[2,10]

Ontario is now in the position to initiate planning which would to create more balance between primary care providers and specialists in the system. OMCEP discussed the implications of moving towards a system with greater primary care participation in maternity care in many of our meetings and consultations. We have summarized the various points of view on this topic below.

Some family doctors expressed the need for OMCEP to put out an urgent call to family physicians to reclaim maternity care as a fundamental part of primary care practice. Midwives hoped to play an increasingly important role in the province's health care system and to be supported to meet the demand for their services. Some obstetricians told us that it is important, and inevitable, that obstetricians focus more of their practice on their role as high-risk care providers and consultants. These obstetricians expressed job satisfaction in specializing in complicated obstetrics and supporting primary care providers to provide care in normal situations and looked forward to collaborative care arrangements, which could support this approach.

Some, including obstetricians, feel passionately that attending normal births is an important part of the work of obstetricians and that this can be important to individual care provider's job satisfaction and to maintaining perspective on normal birth. Many welcomed other care providers but did not want to reduce their involvement in normal maternity care. Others argued that a system based on obstetrician providers of primary care could be the safest and most efficient approach, as the need for consultation with other providers is reduced.

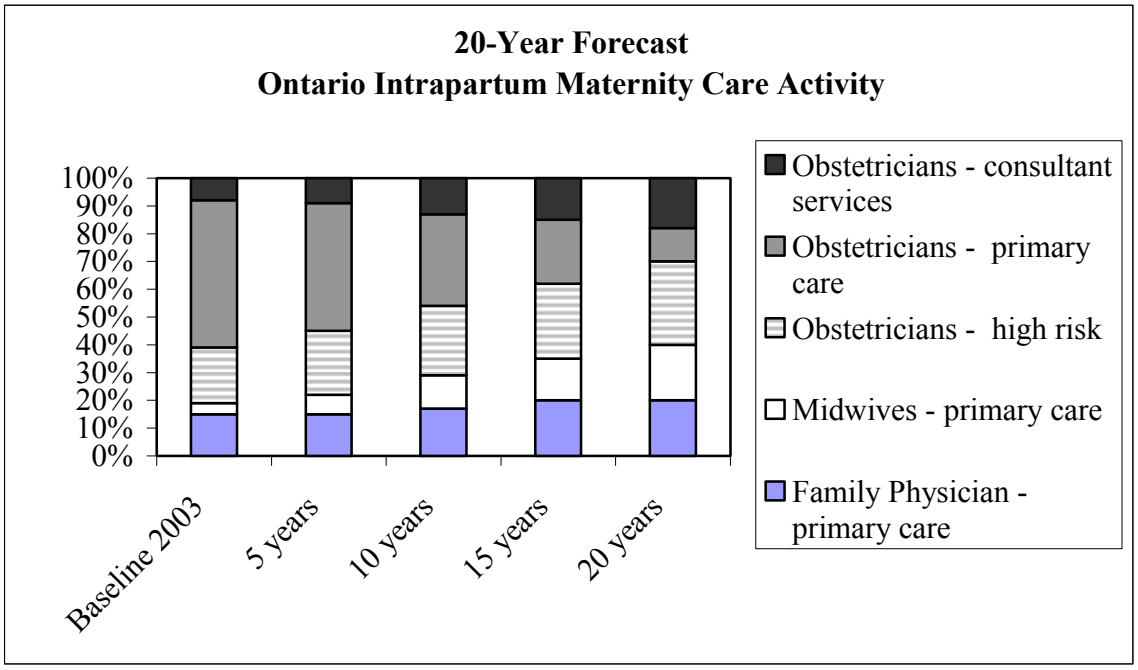
During our consultations, some stakeholders, including obstetricians, link consolidation of services and rising rates of intervention in birth to a system in which specialists attend

most normal births. Others see the current rates of intervention as appropriate and inevitable related to emerging risk factors, women's choices and medico-legal pressures. Still others see the rise in intervention rates as related to a combination of the factors above, which all care providers need to work together to address.

OMCEP concluded that it is vital for Ontario to have a healthy cohort of all care providers, making the system more flexible to the wide geography and demographics of Ontario and the variety of needs of women, families and communities. Choice of care provider and between different philosophies of birth and models of care depends on an adequate supply of all provider groups. Strengthening primary maternity care facilitates inter-professional models of care and education and maximally utilizes all of the provider groups. Strengthening primary maternity care is consistent with the Ministry of Health and Long-Term Care's initiatives to "develop forecasting models based on population health needs and inter-professional team practice to guide education expansion".[8] We feel the safest and highest quality care will come from excellent collaboration between the care provider groups. Our HHR projections are based on that assumption.

To achieve a balance of primary care among all groups, it is essential that no groups experience financial or other disincentives. Below is an illustration of the incremental adjustment that OMCEP proposes take place over the 20-year timeframe in Ontario. To move towards these goals we need to maintain or increase the current number of obstetric graduates, increase the recruitment of family physicians and increase midwifery graduates.

Figure 11



Legend to OMCEP Projections

Obstetricians

Obstetrical services include primary care, high-risk care and consultations at the request of other maternity care providers.

Obstetrical primary care includes primary intrapartum care by obstetricians to women with low-risk pregnancies. OMCEP's projections reflect a gradual move to some obstetricians providing primary and consultant maternity care within inter-professional groups. Inter-professional models may be designed with obstetricians as part of the primary care team as well as acting as consultants to other primary maternity care providers, depending on provider preferences and community need. Obstetrical high-risk care includes intrapartum care by obstetricians to the population of women (usually estimated between 15-20%)[17] that require specialist care throughout pregnancy, labour and birth, but does not include low-risk women who develop complications in labour after a normal pregnancy. This group is defined as those with pre-existing medical and/or obstetrical conditions as well as conditions that arise in pregnancy). It includes those who will be cared for by an obstetrician and those for whom shared care with a primary care provider is appropriate. In communities where access to care by obstetrician specialists is limited, women considered high-risk benefit from a close relationship between a primary care provider and a consulting specialist.

We anticipate that the proportion of women receiving high-risk obstetric care should be adjusted to 30% over the 20-year forecast, related to ongoing improvements in the care of women and/or fetuses with serious medical conditions, increased use of reproductive technologies, delayed childbearing, increased rates of multiple pregnancies, earlier viability and other developments in tertiary obstetrical care.

Obstetrical consultant care includes the proportion of births where the primary care is provided by a family physician or midwife. We expect that this is in the range of 20-35% of family physician and midwifery-attended births, depending on the degree to which these providers are able to work to the full extent of their scopes.[1] A similar proportion of the consultation is estimated to apply in emerging inter-professional models where primary care is provided by family physicians or midwives.

Family Physicians: This category includes intrapartum care by family physicians. Up to an additional 35% of family physician-attended births are included in the obstetrician consultant totals. The projections reflect growth in the overall number of family physicians with a stable percent providing maternity care (approximately 7%). Inter-professional models will assist in stabilizing retention and volumes. This projection is designed also to recognize the vital role played by family physicians in maternity care, particularly for small communities and rural areas.

Midwives: This category includes intrapartum care by registered midwives. An additional 20% of midwife-attended births are included in the obstetrician consultant totals. The projection reflects gradual growth in midwifery attendance at births in Ontario, both by midwifery practice groups and as part of services by inter-professional

groups. OMCEP's projections see midwives as integral members of inter-professional teams, inside and outside of hospital settings, and playing an increasingly important role in rural and remote settings.

Inter-professional Models: The above projections assume an increasing involvement by family physicians, midwives and obstetricians in inter-professional models as providers of intrapartum care. Inter-professional models include nurses, nurse practitioners and registered practical nurses in the provision of nursing care across the continuum of maternity care. Additional providers such as lactation consultants, nutritionists and social workers may also be part of inter-professional teams.

"If policymakers are to address the need of Canadians for comprehensive care, the forces driving decisions about practice style need to be understood. New models of care provision that meet patients' needs while acknowledging differing practice style must be considered, and the discipline of family medicine needs to be supportive of that variety. Supports can be put in place to help new physicians practice comprehensive care. At the same time, models of primary care in which patients receive comprehensive care from a team of health professionals rather than a single overworked family physician should not be seen as the death of family medicine, but rather a re-imagining of the profession that achieves our shared goal: quality patient care from fulfilled professionals."

Professional Association of Interns and Residents of Ontario[26]

OMCEP Projections

Based on Lofsky and Adamson's (OMA Representative to the Babies Can't Wait Project) analysis of births attended from 1992-2003, [1] data from the Ontario Midwifery Program, and trends discussed below we have estimated future average activity patterns for each care provider group. The average volumes were calculated according to the average activity estimates listed below for each profession:

Obstetricians –	200 births/year
Family physicians –	18 births/year
Midwives -	30 births/year

The estimates for physicians have been adapted based on data discussed in the Maternity Care Now Chapter, which show:

- a trend for all maternity care providers to seek work life balance[5,9]
- increasing numbers of female obstetricians and family physicians[1,9]
- different practice patterns in younger and female obstetricians and family physicians[1,9]
- a significant number of male middle-aged obstetricians doing high volume practice will be retiring over the next 20 years [1]

- assumption that initiatives to stabilize the proportion of family physicians doing obstetrics will be successful
- assumptions that initiatives to increase obstetrics residency positions will be successful

Estimates for midwives are based on:

- 40 “courses of care” as full time practice in the current model of midwifery care and an average of 30 births per year as MRP and attendance at additional births as the second midwife
- rates of attrition reported by the Midwifery Education Program and Ministry of Health, Ontario Midwifery Program[14]
- the need to do further research on trends in midwifery retirement rates and demographic shift to a younger population
- assumption of expansion of the Midwifery Education Program gradually increasing entrant class size over five years as per Midwifery Education Program expansion proposal

Regional Planning and the Distribution of Care Providers

OMCEP also considered the need for an approach to HR planning which takes into account population needs and concerns about the distribution of care providers and hospital sites offering intrapartum services. OMCEP's assumption is that all hospitals/communities providing maternity care need to include primary care providers and, in Level 2 and 3 hospitals, on-site consultant care and access to consultation for Level 1 hospitals in their region. Strengthening access to primary care locally and access to high-risk care regionally, using "the right provider in the right place at the right time", are guiding principles for local and regional planning.

We recommend that both LHINs and hospitals develop transition plans, which look at population needs and care provider ratios on a regional basis as well as anticipate care provider shortages at local levels and do succession planning. It is vital that an integrated planning relationship be established and maintained between the communities needing services and the regional planning process for **both** institutions and providers and with provincial policy makers setting targets for graduates of education programs.

OMCEP also recommends that, as part of a maternity care strategy, the Ministry redefine its concept of 'under-serviced area' to include those communities that have insufficient prenatal, intrapartum (medical, nursing, midwifery), obstetrical anaesthesia and postnatal (including well woman/newborn and paediatric) maternity care providers to meet population needs. This definition needs to take into account degrees of rurality including a designation specific to Northern LHIN 13 and 14. The Ministry will need to provide those areas with incentives to recruit sufficient human resources with the goal to have comprehensive primary maternity care services available in every community. Incentives applicable to maternity care include: tuition reimbursement, relocation and travel (for all maternity care-giving professions), alternate payment mechanisms, and on-call incentives, among others.

The approval of a new midwifery practice group is contingent on the demonstration of community need and funding can be directed to communities and areas of the province with demand for midwifery services.

GP Surgeons and Nurses and Midwives as Surgical Assistants

Family physicians with training to provide Caesarean sections in Level 1 hospitals without access to on-site specialists play an essential role in providing safe maternity care in rural and remote communities. Nurses and midwives with appropriate training can provide surgical assistance and maximize health human resources in small communities. The necessary educational opportunities to learn and to maintain these roles are discussed in the next chapter.

Neonatal Care: In response to the withdrawal of many family physicians from maternity care, paediatricians have seen an increase in the proportion of families accessing their primary care services in recent years. Like obstetricians, paediatricians face growing on-call pressures and increased workloads. We project that a move to increase access to primary care providers who offer maternity care will help address this pressure and help ensure appropriate distribution of newborn care providers in all

regions. We also hope that inter-professional care models will include and support specialist paediatricians to work in teams with other providers.

OMCEP has responded to recent recommendations[27] that suggest paediatric attendance at most births justifies consolidation of maternal newborn care in fewer, larger institutions (see Appendix K for OMCEP response to Child Health Network Report). OMCEP's position is that maternity care is a part of primary care for the majority of low-risk women and newborns. Increased involvement of family physicians, midwives and nurse practitioners and inter-professional teams for newborn care is an appropriate long-term objective in Ontario. Furthermore, consolidation of birthing services to satisfy paediatric high-risk volume thresholds, in the absence of an integrated population based primary maternity care strategy, is liable to undermine access to primary maternity care in some communities, thereby contributing to poorer outcomes for mothers and newborns.

OMCEP strongly recommends an emphasis be placed on regional coordination of resources and competency-based approaches to neonatal care. Plans for maternity care (including newborn care) should be synchronized in policy with later infant, child and adolescent care. Collection of accurate data on current maternity care paediatric human resources and trends and determining appropriate target numbers for 2023 should be a top priority of a provincial unit. Advance practice acute care nurse practitioners are widely used in Level III neonatal units. Consideration of their role in Level II units is a strategy to use a team approach and to address access to care needs.[27]

Prenatal and Postnatal Care Providers: With the significant withdrawal of family physicians from maternity care, and reduced access to other primary prenatal care providers in some communities (nurse practitioners, public health, community health clinics and other community programs), more and more women are receiving their prenatal and postnatal care from specialists, and a smaller but growing proportion, from midwives. OMCEP's assumption about future prenatal care is that every healthy (low-risk) woman should be able to access early (first trimester) prenatal care and have regular prenatal and postnatal visits with a primary maternity care provider(s) in her home community. This will require Ontario to develop and maintain targets for a wider, better distributed group of prenatal and postnatal providers than will be practical for intrapartum services. Secondary assumptions are: 1) that with better access to prenatal primary care an increased number of women will avoid pregnancy and postpartum complications by improved preventive care, 2) the subgroup of women and newborns with complications will also be better able to be prioritized for specialist care.[28]

The education and scopes of practice of the family physician, midwife, nurse and nurse practitioner are ideally suited to community-based prenatal and postnatal care to women and families. Registered practical nurses also play an important role in postpartum care in hospital. The roles of these professional groups should be expanded through the increased use of existing models and the development of new inter-professional models and would be complementary to the obstetrical specialist scope, when needed. This expansion will improve local access for Ontario's low-risk population. This approach is expected to yield important outcomes:

- women, including rural and remote populations, will access community-based prenatal and postnatal services closer to home

- women, including vulnerable populations, will receive improved access to early prenatal care and public health screening
- newborns would benefit from improved access to well baby care and breast-feeding support
- women will have improved access to prenatal education, including nutritional counselling, referrals to smoking cessation programs, and other prenatal information known to lead to better neonatal outcomes
- low-acuity services can be provided outside hospital settings
- women and babies receive early screening for social service needs, income and housing support, child health, and parenting support programs
- health resources are used cost effectively

Supports for Recruitment and Retention

Our consultations with care providers suggested many factors that they considered critical to recruitment into maternity care and retention once in practice including:

- valuing maternity care and care providers
- reliable access to consultation services and to back-up in emergencies
- early positive educational experiences
- focus on normal birth and the meaning of birth to women and families
- positive relationships with women and families
- models of practice that support work-life balance
- reasonable on-call systems
- a respectful and collaborative work environment and relationships
- being supported to work fully within the scope of practice
- equitable funding arrangements
- removing barriers to inter-professional care models
- addressing liability concerns and the "culture of blame"
- mentorship for new graduates to enhance their skills and promote their comfort levels in a new working environment
- support for return to practice after leaves

These factors have guided our recommendations about education and about models of maternity care.

A provincial retention strategy for existing maternity care professionals would work to ensure that all caregiver groups are valued as part of the caregiver team and have working conditions that recognize the stresses of on-call care. To this end, hospitals would be

directed to provide supports to all members of on-call maternity care professional groups including:

- emergency parking
- sleep rooms
- internet access
- lounges, and
- nutrition on a 24-hour basis[2]

Succession Planning

Succession planning is essential to the sustainability of maternity care in local communities. OMCEP recommends that regional, LHIN and institutional planning include a forecast regarding existing provider's plans including leaves, retirement and relocation in order to inform future maternity care provider needs and create viable succession plans which support access to primary and specialist care. OMCEP's hospital survey revealed that most institutions expected to need to attract new providers in the near future from a diminished pool. We have concerns that without support for exploration of all of the available options, including collaborative approaches, institutions may have unrealistic plans about recruitment.

Ongoing Research for Health Human Resources Planning

There is a need for more information in many areas related to human resources planning for maternity care. Although we have based our recommendations on the best available evidence regarding provider activity, we have reliable data for births only and for physicians and midwives only. As previously noted we have little reliable information on maternity care nursing activity and dedicated maternity care workforce. We have limited ways of predicting the future distribution of caregivers, with the exception of midwives.

We also have limited information on career choices (both in terms of choice of specialty and intrapartum) and what might encourage medical students and residents to choose intrapartum care. We need to know more about career length and practice patterns related to changes in the provider pool, particularly in light of the dramatic change in family practice and obstetrics from predominantly male to overwhelmingly female dominated professions. This "feminization" of the maternity care provider pool is reinforced by the growth of midwifery, which is currently 100% female. We expect that the Babies Can't Wait Project, expected to report in July 2006, will provide further insights, but ongoing data on which to base recruitment and retention strategies is vital to establishing a sustainable maternity care system.

Conclusions

OMCEP's projections are designed to facilitate gradual, sustainable change that is responsive to trends in practice and demographic pressures and demand. We believe our projections represent a realistic plan based on current (and proposed) enrolment capacity. Our plan includes an increase in all care provider groups. Obstetrical and paediatric specialists continue to figure prominently in both low and high-risk care as Ontario gradually (over 20 years) recovers a viable pool of primary intrapartum care providers.

Designing HR solutions to the maternity care crisis presents an important policy opportunity for the province. Current Ministry of Health and Long-Term Care HHR planning has the potential to contribute to a decrease in the proportion of Ontario's births attended by family physicians and midwives. OMCEP's recommendations aim to re-establish maternity care as an essential part of primary care and to support a sustainable, collaborative and inter-disciplinary system for the province. In the next chapter, OMCEP recommends that future members of all maternity care professions be exposed early in their student careers to best practices for effective collaboration and to inter-professional models of maternity care as part of their core curriculum.

Our human resources recommendations are interdependent on many aspects of the system, including recruitment and retention strategies; provincial coordination; succession planning in local communities; funding, liability, regulatory support and a public/professional educational campaign to support positive change.

Education for Maternity Care Providers: Sustaining Ontario's Maternity Care System

Maternity care education should inspire students about the contribution they can make to the well being of women and families and the job satisfaction they can gain by providing prenatal, intrapartum and postpartum care. Education that creates practitioners who are confident and competent about their role in maternity care is integral to many of OMCEP's recommendations.

A health human resources strategy for maternity care depends on education programs. Conversely, an integrated HHR plan is needed to inform effective planning in education across all of the professions involved in maternity care. The stakeholders we consulted concurred that the role of education programs is vital to the recruitment, and retention of medical, midwifery, nursing and other providers: to encouraging health care professionals to *choose maternity care.*

Education is also of central importance to promoting new models of clinical care and best practices. It lays the foundation for collaborative relationships: between women and families and their care providers and among providers themselves. Inter-professional education is seen as key to future collaboration between providers and inter-professional models of care, not only by OMCEP but also by many provincial and national bodies.[2,5,25,26,29-31]

> Once they [students from different professions] actually meet each other and work together, the myths dissolve and they realize they are all working towards the same goals.
>
> OMCEP focus group participant- obstetrician educator

OMCEP found wide agreement that Ontario urgently needs a proactive plan, linked with broad Ministry of Health and Long-Term Care HHR initiatives, to increase the numbers of maternity care providers graduating from health professional education programs.

Inter-professional Education Network

OMCEP recommends that part of an ongoing maternity care strategy advisory group be a network of medical, midwifery and nursing health science programs charged with:

- promoting intrapartum maternity care as a rewarding and valued career choice
- aligning maternity care education with OMCEP's vision and principles
- maximizing the capacity of all programs to produce intrapartum maternity care providers as per OMCEP's recommendations
- coordinating their activities with a maternity care human resource plan
- creating a cooperative strategy between institutions to provide inter-professional maternity care education

- establishing a clinical teaching registry to maximize utilization of clinical placements and reduce competition between programs and faculties for limited spots
- promoting diversity and cultural competency in maternity care
- establishing a strategy to recruit Aboriginal health students into all of the maternity care professions[5,32]
- establish a cooperative approach to continuing education and maintaining competence for low volume care providers

Early Exposure to Maternity Care and To Normal Birth

Educators from medicine and nursing emphasized the importance of early exposure to maternity care to long-term recruitment. Not all health professional education programs include maternity care in the curriculum. We heard reports that where maternity care is included some students lack exposure to normal physiologic labour and birth. The Babies Can't Wait project will report in detail about the experiences and perspectives of both learners and educators.

OMCEP recommends that programs provide early clinical exposure to maternity care and normal birth as part of the core curriculum. Teaching about normal birth by low-risk care providers such as family physicians and midwives should be encouraged. Student clinical experience ideally should include exposure to community settings in addition to tertiary care centres.

Inter-disciplinary Centres of Excellence for Normal Birth Education and Research should be established to support teaching and learning about best practices to support normal birth and woman and family centred maternity care.

Recruitment

Research is needed into the most effective strategies, which will support education program to recruit into maternity care. Recruitment and retention are related to many broader issues in the health care system and in society such as the valuing of care providers and maternity care. In the previous section on provincial strategy, OMCEP recommends a public and professional education campaign that would, as one of its goals, address some of the barriers to recruitment. This campaign is designed to contribute to recognizing and valuing maternity care and its many faceted contributions to the creation of healthy communities and to long-term health for individuals. By promoting pregnancy and birth as a usually normal physiologic process and as a process with profound meaning for women, families and communities, it will encourage primary care providers to see maternity care as an important role. Through showcasing models of care that are sustainable and addressing care provider concerns about work/life balance, inter-professional relationships and liability concerns this campaign will assist in attracting care providers. Recruitment and retention are also facilitated through continuing education to maintain competence and confidence, discussed below.

While many of the models of care currently under discussion in this report and in national and provincial maternity care projects, focus on sustainable models of care for physicians

and midwives, OMCEP recognizes that nurses in hospitals face considerable work life challenges and issues.[5,33] Situations such as obstetrical service closures, merging obstetrics with other services and staffing concerns can dilute the nursing obstetrical skill base and affect the quality of care. Integrating nurses into new and innovative models of care is a promising way to improve job satisfaction, recruitment and retention in maternity care.

Women's Input and Woman and Family Centred Care

OMCEP recommends that education programs incorporate input and evaluation from women and families about learners and teachers involved in their care and about the design and delivery of academic and clinical curricula. To create the model of woman and family-centred care that we envision, childbearing women and their families should be respected as important teachers. Women's input must be valued, not only as recipients of the care provided by students and teachers but also at the educational policy level.

Although many programs and institutions have policies supporting woman and family-centred care, we heard that some care providers are not confident and comfortable with the knowledge and skills required to implement this approach. This may contribute to routine care rather than an approach based on the woman's needs and values. The principles, skills and attitudes, which support woman and family-centred care, should be integral to the core curriculum in maternity care education.[34]

Workforce Diversity and Diversity Education

Programs should strive to attract students from diverse backgrounds who reflect the population of Ontario. Curricula should include consideration of social, cultural and geographic differences that affect the lives of women and their families and their needs and concerns about maternity care, preparing care providers who are able to work in a variety of settings and have knowledge, skills and cultural competence to work with diverse populations. Curricula should ensure that students have both academic and clinical exposure to the importance of social and cultural context to providing informed choice and sensitive care.[5,32]

> *Despite Canada's commitment to cultural diversity, our health care workforce does not adequately reflect minority groups in our population, a gap that has implications for patient outcomes. Multicultural representation is lacking in some health professions, and there are concerns that rising tuition fees (particularly in medicine) restrict representation by socioeconomic class. The HHR summit focused particularly on the shortage of Aboriginal health professionals – from First Nations, Inuit and Métis communities.*
>
> Health Council of Canada[8]

The Health Council of Canada has recommended that provinces increase the numbers of First Nations, Inuit and Métis professionals in the health workforce.

Lead responsibilities:

- Universities and colleges to implement, in partnership with governments as well as with Aboriginal leadership, national organizations, and communities;

- Employers to develop recruitment and retention programs for Aboriginal graduates.

By 2008:

- Colleges and universities should complete an assessment of their internal capacity to support Aboriginal students (e.g. financial support for education and living expenses, and psycho-social supports such as mentoring and peer counseling) and take action to improve insufficient supports.

By 2010:

- Outreach and support programs to encourage Aboriginal students to consider a health professions career should be established
- The number of Aboriginal students in health professions programs should rise to at least four per cent of total enrolment (to achieve a minimum of proportional representation).
- An inter-professional educational cohort program for Aboriginal students in a range of health professions should be established.[5]

Clinical Placements

In order to maximize access to clinical learning opportunities for students and to address barriers to utilization and competition for clinical placements, we recommend that government support and coordinate a clinical teaching registry. The registry should support the OMCEP vision by facilitating learner's exposure to multiple models of care, inter-professional collaboration, care in low and high volume settings and care in rural and remote communities. The registry should support sufficient and coordinated clinical placements to meet the targets for new practitioners. New undergraduate and postgraduate placements should be developed in both community-based and tertiary care settings. OMCEP recommends the Office of Maternal Newborn Health maintain clinical education agreements with every institution and community setting so that learners have access to the maximum number of maternity clinical experiences.

It is vital to maximise Ontario's resource of experienced intrapartum teachers and mentors and to promote inter-professional teaching and learning. To this end, we recommend that government create an equitable system to remunerate maternity care providers to act as supervisors/mentors for clinical placements to facilitate inter-professional education. Supports for students who have to relocate or travel to satellite clinical settings are vital to using educational opportunities maximally.

Education for Collaboration and Inter-professional Models

Health professional education must include academic and clinical content directed at teaching the principles of collaboration and establishing mutual respectful relationships. Learners need to become familiar with the education, scopes of practice and roles of

other care providers and have the opportunity to learn together in classroom settings and work together in clinical settings to build positive relationships. Teaching hospitals need to include all care provider groups as teachers and learners. Inter-professional education is seen by stakeholder groups as the basis on which to build collaborative relationships and learn to work in inter-professional models of care. [2,25,31]

Our consultations identified a particular need for education about the scope of practice and role of midwives and nurse practitioners and about inter-professional models of care at the undergraduate, postgraduate and continuing education levels.

The Health Council of Canada[5] has set targets for implementing inter-disciplinary education initiatives:

By 2008:

- Each of Canada's university health sciences programs should offer an inter-professional educational program through collaboration among appropriate disciplines.
- Incentives such as tuition subsidies should be available to encourage students and post-graduate trainees to enter inter-professional education programs.
- A collaborative practice workplace fund should be created to enable primary health care settings to provide high-quality inter-professional care and education (for example, to fund mentorships and logistical support for such costs as transportation in rural areas and information technology).
- All health professionals – both new graduates and the existing workforce – should be able to access an inter-professional clinical learning experience.

Rural and Remote Maternity Care

Education also has a role in sustaining and restoring maternity services in rural and remote communities.[36] OMCEP proposes that the Office of Maternal and Newborn Health and the medical, midwifery and nursing programs work together to prioritize rural and remote maternity care education and clinical teaching by:

- undertaking regional recruitment of undergraduate and graduate students agreeing to study maternity care
- developing a standardized educational program for rural and remote maternity care
- creating student placements in rural/remote maternity care, at core and elective levels, for medical, nursing and midwifery students
- increasing the number of 3rd year medical/family practice placements in rural, small community and remote settings
- offering incentives (or direct funding) to experienced maternity care providers to teach in rural and remote hospitals and clinic settings, and to act as supervisors/mentors for clinical placements

- providing funding/grants/scholarships to graduate level students for placements in rural and remote areas, including specific scholarships for aboriginal health care professionals
- creating a Centre of Excellence for Rural Maternity Care

Since physicians, nurses, nurse practitioners and midwives who agree to work in rural and remote areas on an ongoing basis often come originally from those areas, all schools, faculties and councils of medicine, midwifery and nursing should be encouraged to undertake regional recruitment of undergraduate and graduate students agreeing to study maternity care. In addition health science programs should develop creative and interactive approaches to distance education to enable students to complete a significant proportion of their academic courses in their home communities. This is particularly important in strategies to recruit aboriginal students and in designing culturally sensitive models of education.[32,36,37]

Maximizing Capacity/Program Expansion

Family Medicine

There is some data to suggest that recruitment and retention in maternity care is enhanced when family practice residents learn maternity care from family physicians rather than solely from obstetricians.[38] Stakeholders indicated that interactions with other staff (nurses and obstetricians) can build confidence and competence and inspire learners to choose maternity care. Conversely negative experiences can readily discourage learners.

Discussion of recruitment in the literature suggests that it is important for teachers to act as role models regarding work life balance, job satisfaction and present options about working in sustainable call systems.[39,4] Establishing mentorships for new graduates to work with practicing family physicians involved in maternity care is seen as a valuable asset to promote the incorporation of prenatal, intrapartum and postpartum care into a sustainable model of maternity care for a community. Extra funding for these mentorships should be explored through funding models such as the OMA Rural Clinical Traineeship Program.

There are some very positive incentives, which have been put in place to try to address the decline in family practice obstetrics; however, it is not clear whether these measures will be adequate. It is hoped that the decline in the proportion of family physicians providing maternity care can be offset by the increased numbers of family physicians being trained. It is also hoped that shared call arrangements and inter-professional care may make maternity care more attractive to new family physicians. It is encouraging that many[8] family medicine education programs are actively recruiting staff that provide maternity care in order to have positive role models for the residents. Many stakeholders we consulted called for an aggressive campaign within the profession to define maternity care as an important part of practice family medicine. Others are concerned that the decline in family physicians attending births is likely to continue for all of the reasons cited in the literature. All are in agreement, however, that the recruitment of family medicine maternity care providers is a priority. This recruitment must operate in concert

with the broader goals of recruitment and retention of an adequate number of family physicians to provide the broad scope of primary care across the province.

OMCEP found strong support to continue to make maternity care a compulsory part of family medicine training. Ideally residents should receive enough training during their two-year core residency to feel competent. They can then "top up their experience" with extra training in a 3rd year program if needed for more advanced skills.

To increase the number of family physician anaesthetists available to meet service needs in smaller non-tertiary obstetric centres, OMCEP recommends establishing dedicated funding for one year anaesthesia training positions within university Departments of Anaesthesia for family physicians as part of the postgraduate level 3 year of residency training. The number of positions funded should be based on both existing and projected human resource shortages. Funding could be re-instituted for this program and recruitment begun within 12months. The programs should also develop strategies to promote recruitment of family practice residents into family practice anaesthesia fellowships (PGY 3 year). Capacity can also be increased by:

- Facilitating re-entry of established family physicians into one-year, university-based anaesthesia teaching programs with dedicated funding, including provision of additional supplemental funding above that currently supplied since loss of practice income is an important barrier to re-entrant training.

- Provide clear and transparent remuneration contracts for those wishing to re-enter training in family physician anaesthetist programs. This should include an ***a priori*** contractual agreement between the Province and the physician related to the specific location of employment required as part of the return of service agreement since many family physicians wish to ensure their ability to return to their own communities after training.

As the province moves to establish new roles to support the health system, education opportunities for nurses to obtain advanced skills in anaesthesia may become an important aspect of ensuring access to anaesthesia services in as many maternity care units as possible.

Similarly programs are needed to support family physician surgeons who provide Caesarean section[35] capacity and nurses and midwives who would assist.[42] The time requirement for the addition of these skills to a trained maternity care provider is generally 2-6 months.

Midwifery

Unlike medicine and nursing, recruitment to maternity care in midwifery is directly related to entrant class size. OMCEP recommends that government fund expansion of the midwifery program entrant class size to meet demand and support the growth of a sustainable cohort of primary maternity care providers. The Midwifery Education Program has proposed incremental growth in admissions over a five-year period, which

would translate into a gradual increase in growth of the profession in 10-20 years in the proposal invited by the Ministry of Training, Colleges and Universities. Without gradual expansion of the midwifery program, the profession will be unable to produce enough graduates to replace those lost to attrition twenty years from now. In addition, ways to increase the number of qualified international applicants to the International Midwifery Pre-registration Program should be explored. Options for clinical fellowships, research, graduate study and academic leadership in midwifery should be supported.

The Midwifery Education Program curriculum currently includes a term of inter-disciplinary placements.
The expansion proposal includes a revision of the curriculum to improve and widen the inter-disciplinary component of program both academically and clinically with the goal of assisting with integration of midwives into the health care system, improving collaboration and preparing students to work in inter-disciplinary models of care. This is consistent with government and professional organization calls for inter-disciplinary education.[10,42]

As part of the expansion of the midwifery program we recommend that government support and facilitate faculty leaders in midwifery and nursing to work together, with their respective regulatory bodies, and medical and hospital colleagues to create greater mobility between the nursing and midwifery professions. Approaches should address:

- advanced entry/compressed programs for candidates with prior learning
- dual registration considerations
- support for new models of nursing and midwifery collaboration

Stakeholders from aboriginal organizations indicated the need to support aboriginal midwifery education initiatives for both registered midwives and traditional aboriginal midwives.[38] The SOGC has called for the creation of aboriginal midwifery education programs across the country.[32]

Nursing

OMCEP recommends that nursing programs make maternity care a mandatory part of the curriculum. Across Ontario the schools and faculties of nursing have increasing difficulty ensuring that all the learners in the baccalaureate programs have clinical experiences in primary health care settings which expose all nursing learners to normal pregnancy, spontaneous labour and birth and postpartum. There is no coordinated program to maximize the use of maternity clinical experiences in Ontario for nursing learners. Each school and faculty engages in a time consuming yearly process of negotiating with local hospitals. Negotiating for clinical spaces in non-academic health science centres requires agreements which should be negotiated centrally and not require yearly updating. Many maternity units in hospitals could provide excellent clinical experience but are not utilized for many different reasons including no accommodation available for learners, lack of preceptors, and distance to nursing education programs.

The 2005/06 Acute Care Nursing Plan[43] noted that 33% of hospitals reported no 'consolidation' or senior student placements and 31.3% reported no student placements

(group placements) for 2004/05. Further analysis revealed that hospitals reporting no or very limited number of student placements are those who do not have a "local" school of nursing.

Our consultations have identified that nursing learners often do not witness a single birth in their training. With the rising Caesarean section rate many learners who do witness a birth will not witness a spontaneous vaginal birth. Maternity clinical nursing practice is often incorporated into family nursing courses. While this may be appropriate, nurse educators need to ensure that the theoretical and clinical components of maternity care are maximized to encourage learners to consider maternity care practice. As many current nurse educators are not familiar with intrapartum care approaches, strategies should address ways for current intrapartum nurses to provide mentorship and learning.

OMCEP recommends that all schools and faculties of nursing provide maternity clinical practice to all nursing learners in baccalaureate programs that includes pre, intra and post partum experiences and that learners be exposed to low-risk primary maternity care as well as high-risk care and to collaborative and inter-professional models of care.

Obstetrics Specialty and Subspecialty Education

To restore the sustainability of existing specialized service programs, we recommend that government ensure full funding and incentives to learners and teachers to support a sustainable supply of obstetricians, maternal-fetal medicine specialists, obstetrical anaesthetists (including family physician anaesthetists), paediatricians and specialized perinatal nursing programs to meet the needs of Ontarians. Both university and hospital departments of obstetrics and gynecology should support the development of inter-disciplinary learning opportunities for learners.

Supply of Other Care Providers Essential to Maternity Care

As part of a regional maternity care education and public health planning process, it is essential that government monitor and make sufficient educational resources available to ensure that each local community can maintain a sufficient supply of maternity care programs to meet population requirements including:

- lab and imaging services for maternity care
- public health maternity care
- social work services
- prenatal, postnatal and newborn care educators
- lactation support services
- bereavement services

Re-Recruitment

That to acknowledge the inherent skill sets in previously practising intrapartum maternity caregivers and professionals, government offer incentives for nurses, physicians (including family physicians and specialists: obstetricians, paediatricians, anaesthesiologists) and midwives (including international candidates) to pursue

educational opportunities to return to intrapartum clinical practice and/or to provide specialized services such as obstetrical anaesthesia, general surgery (for Caesarean section) prenatal care and newborn care.

Maintaining Skills and Continuing Education

Ongoing education is vital to safe care and to retaining care providers. We recommend that government direct and fund hospitals to allocate resources to provide a lead local maternity care educator position, such as a perinatal nurse or midwife clinical educator, to make continuing education and mentorship both accessible and cost effective to hospital staff and community caregivers. This position would be best co-ordinated through regional maternity care networks in order to share resources and expertise.

All care providers must also have funded access to emergency skills training, including neonatal resuscitation, and such programs such as ALARM, MORE^{OB}, ALSO, Midwifery Emergency Skills and ACORN.

OMCEP recommends that government make available the necessary resources to low-volume hospitals in small communities to enable them to provide (or link with other hospitals that can provide) continuing education opportunities for staff to maintain intrapartum skills. Programs should provide paid education leave to professionals from low volume communities to upgrade skills in their own or like communities to maintain competence and confidence in maternity and intrapartum care. Units with large number of births have an important role to play in supporting continuing education placements. We also heard from stakeholders that experience in Level 1 and low-risk units are important for nurses and family physicians from low volume communities to building confidence and competence in low-tech settings.

We also recommend that government fund health science programs to work with hospitals and regions to expand the use of information technology systems to enable all providers, including those in rural and remote areas, to update their education and skills development. In addition, continuing education programs are to be made available in a variety of locations and formats, including: in-house, in-hospital, via electronic media, through local educational settings and by individual maternity care providers licensed to provide continuing education training.

1. Lofsky S, Adamson M. Changing trends in obstetrical physician resources in Ontario 1992-2003. Report to "Babies Can't Wait". 2005 Mar.

2. The future of maternity and newborn care in Canada: principles and recommendations. The Future of Maternity Care in Canada; London, Ontario; 2000 Nov 24-25.

3. The Society of Obstetricians and Gynaecologists of Canada. Multidiscpilinary collaborative primary maternity care. A proposal to the Primary Health Care Transition Fund, Health Canada. 2004 Feb.

4. Maternity Care Enhancement Project. Supporting local collaborative models for sustainable maternity care in British Columbia. 2004 Dec.

5. Health Council of Canada. Modernizing the management of health human resources in Canada: identifying areas for accelerated change. Report from a national summit. 2005 Jun 23.

6. Davies B. The foundation of maternity care: the nurse. The Future of Maternity Care in Canada, London; 2000.

7. Haaf W. Nurse shortage cracking maternity care foundation. The Medical Post 2000 Dec 19;36(42):Available from: www.medicalpost.com

8. Laying the foundation for change: A progress report on Ontario's health human resources initiatives. Ontario; 2005 Dec.

9. Ontario Medical Association Human Resources Committee. Position paper on physician workforce planning. 2002 Apr 4.

10. Lalonde AB. Access to maternity care [editorial]. JOGC 2005 May;27(5):445-6.

11. Helewa M. Maternity care: crisis within and without [editorial]. JOGC 2005 Sep;27(9):845-6.

12. Rogers J. Integrated maternity care for rural and remote communities. A proposal to the Primary Health Care Transition Fund, Health Canada. 2004.

13. Kasperski JM. Babies can't wait: primary care in obstetrics crisis. A solution focused PHCTF research project. 2004 Dec 9.

14. Ontario Midwifery Program, Ministry of Health and Long-Term Care.

15. Stanimir G. Shared obstetrical care: A case study. Presented at the Ontario Hospital Association Interdisciplinary Care Conference; 2004 Dec.

16. Health Council of Canada. Health care renewal in Canada: accelerating change. 2005 Jan.

17. World Health Organization. Safe motherhood: care in normal labour: a practical guide. Geneva: WHO Division of Reproductive Health, 1997.

18. Canadian Institute for Health Information. Giving birth in Canada: a regional profile. 2004.

19. Perry TR. The certified registered nurse anesthetist: occupational responsibilities, perceived stressors, coping strategies, and work relationships. AANA Journal 2005 Oct;73(5):351-6.

20. Canadian Institute for Health Information. Giving birth in Canada: providers of maternity and infant care. 2004.

21. European Institute of Women's Health. Women's health in Europe: facts and figures across the European Union. Dublin, Ireland; 2006.

22. World Health Organization (2000). Munich declaration: nurses and midwives: a force for health, 2000.

23. Kornelson J. Solving the maternity care crisis: making way for midwifery's contribution. Prepared for the British Columbia Centre of Excellence for Women's Health, 2003 Jun.

24. Hawkins M, Knox S. The midwifery option: a Canadian guide to the birth experience. Toronto: Harper Collins; 2003.

25. Expert Panel on Health Professional Human Resources. Shaping Ontario's physician workforce. A report to the Ministry of Health and Long-term Care. 2001 Jan.

26. Professional Association of Interns and Residents of Ontario. Primary importance: new physicians and the future of family medicine. Position paper on the sustainability of family medicine. 2004 Jun.

27. Child Health Network of the Greater Toronto Area. Strengthening the maternal, infant and newborn system by design. Toronto; 2005 Mar.

28. Health Services Restructuring Commission. Proposed inter-professional primary health care costing models. 1999 Nov.

29. Nolte J, Tremblay M. Enhancing interdisciplinary collaboration in primary health care in Canada. 2005 Apr.

30. Perinatal Partnership Program of Eastern and Southeastern Ontario. Perinatal services in Ontario: how are we doing? 2005 Mar.

31. Barriers and enabling factors task groups report. Enhancing Interdisciplinary Collaboration in Primary Health Care Initiative. 2005 Feb.

32. Society of Obstetricians and Gynaecologists of Canada. A guide for health professionals working with Aboriginal peoples. SOGC Policy Statement No. 100; 2000 Dec.

33. Medves J, Davies B, Heino A. Report of a survey of rural maternity nurses practicing in Ontario [in review].

34. Family-centred maternity and newborn care, 4th ed. Prepared for Health Canada and the Canadian Institute of Child Health. Health Canada, 2000.

35. College of Family Physicians of Canada, Society of Rural Physicians of Canada, Society of Obstetricians and Gynaecologists of Canada. Joint position paper: Training for rural family practitioners in advanced maternity skills and caesarean section. Available from: http://www.cfpc.ca

36. Epoo B, Nastapoka U, van Wagner V. Bringing birth back to the community: midwifery in the Inuit villages of Nunavik. Proceedings of the International Confederation of Midwives, 2005 Jul.

37. National Aboriginal Health Organization. Midwifery and aboriginal midwifery in Canada. 2004 May 28.

38. Biringer A, Tannenbaum D, Caplan J. Provision of maternity care by family medicine graduates of a tertiary care hospital. Hope for the future? Presented at NAPCRG, New Orleans, 2002 Nov 18.

39. Wright B, Scott I, Woloschuk W, Brenneis F. Career choice of new medical students at three Canadian universities: family medicine versus specialty medicine. CMAJ 2004;170:1920-24.

40. Smith LFP, Reynolds JL. Factors associated with the decision of family physicians to provide intrapartum care. CMAJ 1995;152(11):1789-97.

41. American College of Nurse-Midwives. Position statement: The certified nurse-midwife/midwife as first assistant at surgery. 1998 May. Available from: http://www.midwife.org

42. Oandasan I, D'Amour D, Zwarenstein M, Barker K, Purden M. et al. Interdisciplinary education for collaborative, patient-centred practice: research and findings report. Ottawa: Health Canada; 2004.

43. Lankshear S, Rush J. Acute care nursing plan report. A report for the Ministry of Health and Long-Term Care, 2005.

Models of Maternity Care for Ontario

The Ontario Maternity Care Expert Panel has completed its work over the last 18 months at the same time as other provincial, federal and international initiatives have been examining maternity care issues. These projects have created a synergy around solving access issues and have shared findings and, in particular, have shared a focus on models of practice that can increase access for women and address the looming shortage of health care providers. The challenge for physicians, midwives and nurses is to provide comprehensive maternity care acknowledging that health care providers need to balance work and home lives in order to sustain a career in this field. In OMCEP's deliberations and those of other jurisdictions new team-based models, especially those employing inter-professional and collaborative models of care, team practice has emerged as a direct response to access issues and provider work loads, and because of concerns about the sustainability of traditional solo practitioner models. There is also a widespread belief that, in many settings, new models of service delivery can offer high quality care to women and their families. New models have the potential to improve recruitment and retention in some settings through increased size of call groups and through improving collaboration.

A New Model of Care

"Some of the concepts I've heard the other people speak of during the meetings of the shared care and the collaborative care, it sounds wonderful from a consumer point of view that, you know, people would be working together to help you through your pregnancy, your delivery. You know, you'd have the benefit of having a lactation consultant and a nurse practitioner, an OB, a midwife, everybody working together and combining their knowledge. I think that would be very good. I'd like to see that happen here."

Rural Participant (Integrated Maternity Care for Rural and Remote Communities project[1])

There are a number of models of maternity care in Ontario today. In many settings, existing models of care are working well and providing excellent evidence-based maternity care. Those models need to be supported and maintained. In other settings, however, existing models of care are fractured, hard to coordinate, and face shortages of the professionals needed to provide the care that women and their infants require and deserve. The challenge for health care planners in Ontario will be to preserve the models that are working well, while encouraging change where needed.

OMCEP team members were provided with plenty of data describing emerging and innovative models of practice including the Hamilton model[2] the Thunder Bay family practice model,[3]the proposed inter-professional Thunder Bay model,[4] the Marathon model,[5] Six Nations Birth Centre model[6] and models from other provinces: the South Vancouver model,[7] the Nunavik model,[8] and the Rankin Inlet model.[6] OMCEP members had formal and informal correspondence and discussions in focus groups, stakeholder consultations and at many conferences and other venues with representatives of these models. Informants were very generous with their time to answer our questions and provide guidance about possible replication of models in other settings.

Model Scenarios

There are essentially three types of models for primary prenatal, intrapartum and postpartum care. Each of these models assumes maternity care nurses are part of the team in hospital and community, although their roles may be different with different providers.

1) Established Single-professional models

In these models, a solo practitioner or a group of practitioners from the same profession establishes a maternity practice and provides maternity care, sharing on-call responsibility. These groups are family physicians, midwives or obstetricians. Groups may share philosophy of care and policies. Referral to an obstetrician or other practitioner is initiated when care exceeds the scope of practice of the other professions. In established physician models, nurses actively assist in the provision of intrapartum care and in various aspects of prenatal care. Care is also provided by anaesthesiologists/GP anaesthetists, paediatricians, neonatologists, psychiatrists, social workers and other professionals, as required, during the course of care.

Frequently, the health care provider who provides access into the health care system (usually the family physician) does not provide intrapartum care. This necessitates a transfer of care to intrapartum care providers such as other family physicians, midwives or obstetricians. A common model of this form of care in Ontario occurs where prenatal care is initiated by the family physician, with the woman being transferred to the care of an obstetrician at some point in pregnancy.

2) Multi-professional models

In these models a group of practitioners who have a maternity practice work closely with other professionals for referrals; in some cases, the various professions may also be co-located in a multi-professional clinic. The group provides on-call care across the continuum but within each professional designation only. These models allow easy access to other professionals for advice and consultation. Planning and delivering care to women with complex health and social requirements can be facilitated with a multi-professional approach. Groups may share philosophy of care and policies. In these models remuneration may be kept separate with differing payment schemes in effect.

3) Inter-professional models

In these models there is a group of different professionals who work together as a team to provide seamless care to women and their families. Care at any stage of pregnancy, labour and birth, and postpartum is provided by the most appropriate professional. An obstetrician may provide prenatal care on one visit and a nurse or nurse practitioner on the next visit. Labour and birth care may be by a midwife, family physician or obstetrician depending on the woman's requirements, with nurses providing nursing care. Alternative methods of remuneration may be needed to fund these models. These models demand a deep commitment to collaborating among team members as they address philosophy of care, shared call schedules, continuing education, dedication to working as a team, resolution of conflict, and utilization of all team members, as appropriate.

Team Approaches to Maternity Care

"When the other people who have more experience in health care were discussing shared care, it certainly sounded like an interesting concept having nurse practitioners or other people take care of you during your pregnancy which again from a consumer point of view, I suppose at the very end if things started to happen and for some reason your midwife or doctor wasn't available, at least if there were other people that you had already met, I think you'd be a lot more comfortable."

Rural Participant (Integrated Maternity Care for Rural and Remote Communities project)[1]

While OMCEP emphasizes inter-professional models as a constructive way to address many service pressures across Ontario, panel members agreed that "one size does not fit all" and that no single model of maternity care could meet the needs of Ontario's diverse communities. There are other high quality existing models that should be maintained and promoted. Models requiring large numbers of inter-professional resources may not be feasible in the many small communities and rural and remote areas of this province that are most at risk right now. We looked to the findings of another key maternity care project, whose own report was released in December 2004. British Columbia's "Maternity Care Enhancement Project"[7] concludes:

"This report does not recommend a single prescriptive model for the province but rather offers a range of options under a woman-centred, locally-based framework of care delivery that individual health authorities and communities can use to develop collaborative solutions that are unique and appropriate to their needs."

Maternity Care Enhancement Project

OMCEP identified models of maternity care that are established, in development, or are being promoted as viable options. The models are outlined in Appendix C. Established models of care include single-profession models of family physicians, midwives and obstetricians as well as high-risk care models. Innovative models include those with a more integrated approach to care with teams of health care providers working in close proximity and with smooth referral patterns -multi-disciplinary models (for example the Hamilton Maternity Centre model).[2] Inter-professional models include the Nunavik[6,8] model and the South Vancouver model[7] and those that have been discussed federally (Multi-disciplinary Collaborative Primary Maternity Care Project - MCP[2])[9] and provincially (Babies Can't Wait and Integrated Maternity Care for Rural and Remote Communities).[1,10]

A model of care that has become the default option in some parts of our system is to consolidate services with the result that most women are referred to larger units away from home – not for complex care – but for normal pregnancy and birth care. This has well-documented disadvantages. It requires women to travel away from their home environments, even if it is in the same large urban area, and has been demonstrated to increase maternal and newborn morbidity.[11] The cost of women giving birth in environments away from home is greater than the cost of women giving birth in community hospitals closest to home. [12]

All maternity models of practice have tensions that will have to be balanced during planning, implementation, practice and evaluation. Models must be acceptable to the women and the families they serve, but they also need to be acceptable to care providers, be cost-effective, and based on best practice.

In the Babies Can't Wait Project[13] specific components of models have been evaluated to ascertain the preferences of practitioners and learners in maternity care. The aspects evaluated have included hard and soft call, perceived barriers to collaboration, attitudes and beliefs about collaboration, and preferences of team members. The results of the project will be available in the late summer of 2006.

Models that are working most effectively in the Integrated Maternity Care for Rural and Remote Communities project (IMCRRC)[1] involve collaboration between obstetricians, midwives, nurses and family physicians. In one community where family physicians have ceased providing intrapartum care, midwives and obstetricians are proposing a joint project working in an integrated model with nurses. In this community, midwives are currently providing care for 40% of all births. With only two obstetricians in the community, their focus will be on providing care for high-risk women and consultation/ back-up for the low-risk teams of midwives and nurses. This arrangement will reduce the on-call demands on small specialist groups as they will be called for consultation and high-risk care, rather than a larger proportion of low-risk births as well. At least one family physician has indicated interest in returning to intrapartum care when the new model is established.

To make this model feasible funding models will need to reflect the essential service provided by specialists to primary care providers, especially where a small number of specialists are supporting care provided by midwives and/or family physicians.

Model Design

Each community's needs are unique. Below is a list of considerations that can be used to identify a model that will fit with the needs and resources of a particular setting.

- What are the population demographics of the community, including risk status? How many babies were born in the community last year – or how many could have been if there had been suitable maternity care facilities and providers?
- What are the current facilities available for care across the maternity continuum? Is there a hospital, health centre or birthing centre? Does a new facility need to be built or converted or upgraded?
- Is there support from community leaders and the general population to either continue having babies born locally or to return birth to the community, if previously discontinued?
- Who will provide care? Are there family physicians, midwives, obstetricians, and nurses available? How is recruitment for new team members going to be conducted? Are there anaesthesiologists, paediatricians and surgeons locally available? Can local public health services support women and their children? Are human resources or other resources needed?
- Will the intrapartum model be single profession, multi-professional or inter-professional? How will 24/7 on-call care be provided? How will the team work together? Are there agreed plans for transport of mothers or babies if necessary?
- Have issues of remuneration been discussed with the Ministry of Health and Long- Term Care to fund the model proposed?
- Are there policies and procedures based on best evidence to support the maternity model in place and agreed to by all the professionals, administrative staff, and local leaders in the community?

Clinical Care

In any model clinical care must to be organized so that women are provided the right care, at the right time, by the most appropriate care provider, in as seamless a way and as close to home as is feasible. Below are some considerations for those developing models for clinical care.

Prenatal Care

- Will the prenatal care be by one or more of the same profession or by different professionals?
- Who will coordinate referral for services such as prenatal screening, ultrasound and prenatal education?
- Is there a care plan in place for labour and birth? Does it maximize the woman's chance of having a normal physiological birth?

Labour and birth care

- What birthplace options are available for this community: hospital, birth centre and/or home?
- Where are the closest hospitals? What is the plan for transfer to a referral hospital in the event that care becomes too complex for the local setting?
- Who will attend births? Are there appropriate intrapartum protocols to support care for all women – those needing straightforward care and those needing more complex care? Who will provide care to the newborn at the birth?
- Are there appropriate plans for postpartum care available?

Postpartum care

- Who will provide care to mother and newborn in the postpartum period?
- Is there breastfeeding support in the community? Where will women and infants go for regular checkups?
- For women and families needing specialized follow up are there locally available services or referrals to larger centres? Are there timely resources available to enable women/newborns to return to their communities after care in the larger centres is no longer required (retro-transfer)?
- Is there mental health support for postpartum women? Are there public health and health promotion programs for mothers and babies?

An internet-based survey was conducted on the Ontario Women's Health Council website to assess women's priorities for maternity care. Women were informed of the survey through many contacts including an email to many women's groups in Ontario.

Figure 12

OMCEP's Web-based Survey for Women Identified the Following Priorities:

1. One-to-one care in labour
2. Choice of birthplace
3. Knowing my care provider
4. Choice of care provider
5. Support for breastfeeding
6. Access to prenatal care in early pregnancy
7. Care in my own community
8. Access to laboratories and ultrasounds
9. Support for postpartum depression

In responding to these priorities, OMCEP believes it is important to preserve existing models that are working well, and we do not intend that any community, small or large, take the models outlined as the only ones that will work in the long term. We're also concerned changes should be made only after assessing possible unintended impacts on existing services. For example, adding an inter-professional group to a low-volume community that is currently well served by a small but stable team of family physicians offering maternity care could cost the current service providers their livelihood and force them to relocate; clearly, adding new models of inter-professional care is not appropriate in that situation. Multi and inter-professional models of care may be vital, however, when a solo practitioner or members of a small group of practitioners are planning on retiring or moving and the community faces challenges in replacing these professionals.

Models of care must also be flexible. In Ontario today the only professionals who regularly attend home births are midwives. But midwives in other provinces and in selected sites in Ontario attend home births with registered nurses or nurse practitioners as the second attendant. Midwives who choose to work in inter-professional models would continue to have the responsibility of attending home births with women who choose this option. If they share call with physicians the option for home births may be limited to when the midwife is on-call. Many physicians consulted during our research expressed support for inter-professional models but were very reluctant to attend home births. The College of Physicians and Surgeons of Ontario does not restrict physicians from attending home births and some might choose to include home births; however

OMCEP supports models, which have the flexibility to recognize care providers' different roles, scopes and competencies.

As OMCEP prepared our outline of various service models, the panel deliberately focused on examining primary health care models. This reflects our firm belief that maternity care services should be organized from a primary health care focus first, with built-in referral protocols for high-risk care as required.

Contribution of Public Health

With changes to the 'Mandatory Health Programs and Services' guidelines and cost-shifting to municipalities that occurred in the 1990's, the role and capacity of local Public Health agencies in the direct provision of prenatal and postpartum care has become inconsistent across the province. OMCEP has outlined the following assumptions that will be carried out by Public Health with a renewed focus on maternity care:

- Develop and provide culturally appropriate education materials on reproductive and maternity care
- Assist with relevant surveillance and data collection and analysis to promote population-based planning for maternal and newborn services in Ontario
- Coordinate the provision of prenatal education in all Ontario communities
- Coordinate a data repository of community referral information to enable Public Health units to refer women and families to maternity care providers and primary to tertiary services across the province and support services
- Participate in emergency preparedness planning for the maternal-newborn population
- Fund and coordinate translation and interpretation services so that women and families can receive services, wherever possible, in their own languages
- Have public health nursing function to the full scope of nursing role in maternal and newborn assessment and care
- Maximize linkages between women and families, providers, acute care institutions, primary care services and other women's and newborn health programs such as those for domestic violence, homelessness, addictions, mental health, bereavement, infant hearing, healthy babies, healthy children, child welfare and others.

Established Single-professional Models of Care

There are three groups of intrapartum maternity care providers who work in established models of care – solo or team-based groups of family physicians, obstetricians or midwives. All are supported with care provided by registered nurses, registered practical nurses, anaesthesiologists, paediatricians, neonatologists, social workers and other allied health care professionals as required.

In these practice models, women may be seen by one or a small team of providers during pregnancy and may be cared for in labour and birth by the primary provider or by another member of the team. There is a shared philosophy of care between providers; women know and have chosen the type of professional that they wish to attend their birth; and there is a call system that ensures coverage 24 hours a day, 7 days a week. The call systems may vary between providers. In some the primary care provider will attend the births of all of their clients except when they sign out to another. The more common-call system for physicians is to attend labour and births only on the days they are assigned to provide care for all women in the group. For midwives it is more common to be on-call unless they have scheduled time off.

Thunder Bay Family Practice Model

In Thunder Bay, population 115,000, there are 1,600 births per year. The family practice model was developed to increase the number of family physicians involved in providing full maternity care practice including intrapartum care. There is a mutual philosophy of family-centred care and prenatal care is provided in five different family practice settings. Referrals are received from other family physicians and nurse practitioners for late pregnancy and intrapartum care. The referring family physician is encouraged to participate in hospital neonatal care. The model also supports family practice resident education to encourage future family physicians to include full spectrum maternity care in their practices.[3]

These single profession models have provided the majority of the care to women in Ontario until now and are still the backbone of the system. However, practice patterns are changing and incoming maternity care providers are increasingly reluctant to establish practices where they are required to be on-call all or most of the time. When groups of professionals from one discipline work together, it is possible to provide 24-hour on-call care and balance their on-call and home life responsibilities. Maintaining maternity care services is more difficult when there are insufficient numbers of any one profession to support a large enough call group to be sustainable. This is especially relevant in smaller towns and communities.

Models for 24-Hour Call

In our discussions with providers, administrators, and decision makers around how call structures are created, the panel discovered there are many creative approaches to balancing the 24-hour call requirement of maternity care with 'having a life' outside of work.

Soft Call

"Soft call" refers to the traditional model where the clinician is on-call for a specific group of women and newborns, except unless specifically signed out. This is less popular today as it means that maternity care providers can be on-call virtually all the time.

A variation of "soft call" exists where the clinician has a regular schedule of on-call/off-call times but reserves the right to attend the labour and birth of the women in their care. This approach may present more time on-call but is often described by those who choose it as increasing their job satisfaction. Midwives often schedule holidays in advance and do not book care for women who are due during their holiday time.

Hard Call

"Hard call" schedules are more popular with many providers as they are predictable. Individuals take call to attend all labours and births in a given time period from 24 hour time periods in busy urban practices to weekends or, in very rural places where birth numbers are low, taking maternity calls for a month.

A 'hard call' system can make it easier for maternity care providers to organize the rest of their practice including family practice or operating room time, prenatal and postpartum clinics, home visits for midwives and work-life balance. However, continuity of care for women can be challenging to provide when the team providing 'hard call' expands beyond a small group.

Call Back

"Call back" refers to the practice where nurses are asked to return for additional time at work in a labour and birth unit when there are more women and their families to care for than can be managed by the staff already on shift. Nurses in many units are required to provide this service in addition to their regular shifts. Call back has also been used to staff an operating room for Caesarean section if this unit is not staffed around the clock.

Any professional group with unpredictable volumes of intrapartum cases may have to explore Call Back or cross-training strategies to maintain a sufficient pool of available nurses for busy periods in the intrapartum unit.

Some suggestions about call for low number maternity call have been recommended by Rogers 2003.[14]

Community and Institution Characteristics

Throughout the panel's discussions, health care providers, consumers and the general public stressed the importance of designing maternity care solutions that respond to the challenge of Ontario's vast geography. The majority of Ontarians live along the northwestern shore of Lake Ontario. In fact, 80% of the births occur in 34% of the hospitals in Ontario leading to higher volume settings. However, the other 20% of the births occur in low volume settings in more rural and remote places in Ontario in 66% of the province's hospitals, covering most of Ontario's vast geography (see Maternity Care Now, Figure 1). This means that development of maternity models that will provide equitable access to care for all women must take into account some very diverse situations.

- Is the community urban, rural or remote?
- Is the population stable, shrinking or growing? What are its demographics?
- What are the main job occupations of the population? Is the community sustainable in the long term?
- How far do women travel to access maternity care in their community? How far do women travel out of the community to access services? By road or air? Is there financial reimbursement available for families to compensate for travel and accommodation costs?
- What are the traditional referral patterns for high-risk care?
- What is the cultural make up of the local population?
- Are all women and their families provided care through OHIP? If not, are there providers willing to provide care? Are there existing financial arrangements with the provincial or federal government?
- Is the community designated as under-serviced for health care services?
- What is the relationship between the community and academic centres? Are there formal ties to one academic setting for education and training?
- Is the community able to access high speed internet and web-based services to utilize technology and new approaches to communication, consultation and information?

Ontario Midwifery Model

The Ontario midwifery model has evolved over the past three decades in response to women's requests for continuity of care and care provider, care focused on normal pregnancy and birth and choice of birthplace, including home birth. Group practices have been established across the province. Usual practice size varies from 2 to 12 midwives. Practices share office space, provide call and backup for each other, and have hospital privileges which facilitate easy access to obstetricians and other specialists for consultation as required. A midwife acts as care coordinator for each woman and her family. A second midwife (or a small team of midwives) are also involved in the care so that a woman knows that she will have one of the midwives she knows present in labour and birth. In most cases two midwives attend each birth in Ontario. [15]

Midwives are developing a variety of models within existing practice groups to cope with their on-call responsibilities. There are also innovative inter-professional models being proposed in which midwives will share care with nurses and nurse practitioners, obstetricians and family physicians. Examples include shared prenatal clinic space; prenatal visits shared between midwives and nurse practitioners, or family physicians and midwives; midwives and family physicians sharing on-call coverage, nurses attending births as second attendants with midwives in the hospital and home settings; and a common intake process for all pregnant women seeking care from midwives and obstetricians. The Integrated Maternity Care for Rural and Remote Communities project[1] is supporting the development of models by local communities and care providers to create sustainable maternity care that builds on the strengths of existing care providers and enhances inter-professional collaboration in rural and remote communities.

Sioux Lookout Model

Sioux Lookout Meno Ya Win Health Centre provides hospital based and community services to over 28,000 people of Sioux Lookout and 28 northern isolated reserves. In 2004-05 there were 290 babies born in the community. There are 12 family physicians who provide maternity care; three have additional education and provide Caesarean sections as required and an additional three are family physician anaesthetists. There are ten full-time and two part-time nurses who provide mostly maternity care but also work in emergency and in-patient units. The closest centre offering maternity care is Dryden (150 km away) and the closest tertiary centre is in Thunder Bay (450 km away). The administrators and physicians anticipate that the number of births will increase in the next few years.

Marathon Model

Marathon, a community on the north shore of Lake Superior has a unique primary maternity care program. In the fiscal year 2004-2005, 27 babies were born at the Wilson Memorial General Hospital. There were seven physicians who provided care during this time period, and eight nurses who provided intrapartum care at the hospital. Each of the physicians provides care to women for one month at a time in any given year. This means that if a woman is expecting her baby in August she receives prenatal care from the August physician and then in most instances the August physician attends the birth. Physicians take call for labour and birth for the entire month (2 or 3 births). After birth women then receive ongoing care from their own family physician. Women are carefully screened prior to going into labour, as the community does not have the resources to provide anaesthesia or Caesarean sections. These services are 198 kms away in Thunder Bay.

In a survey of care providers and women, overall everyone was satisfied with the model, quality of life significantly improved for physicians and there was less disruption to the rest of their practice. [5]

Provincial Co-ordination of Transportation and Evacuation in Ontario

OMCEP recommends a provincial approach to transportation and evacuation in Ontario that recognizes the different levels of urgency in pregnancy and birth that require appropriate response times.

Transportation and evacuation need to be streamlined whether by road, helicopter or fixed-wing aircraft.

Inter-facility transport is often confused with emergency transportation requests and requires a different approach. Inter-facility transportation is often required to transfer women who have the potential to deliver early and may require a higher level of intrapartum care and for preterm neonates who are stable and are returning to an institution closer to home.

The Child Health Network (2005)[16] recommended:

1. That 911 Emergency Medical Service (EMS) response be separate from inter-facility transport. Funding a system for inter-facility transport would ensure access to EMS vehicles for pre-hospital emergencies. This is consistent with the entire provincial EMS system in Ontario.
2. To facilitate more effective use of transport, emphasis should be placed on transfer back from tertiary centres to community facilities as appropriate, to ensure that there are appropriately qualified professionals to accompany patients during inter-facility transfer, and that there are appropriate equipment and vehicles to conduct transfers in a timely manner

A transportation system that is appropriate for Toronto will not be the same as one needed for the rest of the province and these should be organized distinctly. A maternity strategy for transportation needs to be assessed for the rest of the province recognizing existing referral patterns to health sciences centres. OMCEP recommends that these be integrated into planning for future requirements of maternity models of care and reinforced at the regional level. Specifically, we need an enhanced province-wide emergency transport system for women with pregnancy complications as well as a neonatal transport system for premature and ill newborns.

Multi-professional Maternity Care Models

The OMCEP team identified a number of variations of multi-professional primary maternity care models (see Appendix C). Multi-professional models have varied financial arrangements and women may see members of different professions through pregnancy, labour and birth, and the postpartum period. Care may be parallel with a number of providers involved in prenatal care and birth or sequential in that one provider delivers care and then refers on to another. Advocates may see multi-professional care, especially when professionals are co-located, as an effective means of streamlining services to improve access (‘one-stop shopping’).

Family Health Teams

Primary care renewal has seen the development of the Family Health Team (FHT) concept as a way to ensure Ontarians will have continued access to primary health care.[17] The criteria for developing Family Health Teams are evolving at this time.

OMCEP recommends that maternity care – including the access to prenatal care early in the first trimester that is critical to optimum health outcomes – be identified as an essential part of primary care in Ontario. OMCEP recommends that Family Health Teams be required to provide access to maternity care for the population they serve.

This could take place in a number of ways, outlined below:

1) Through providing access to maternity care services on site in an inter-professional team which could include shared care between a nurse practitioner [RN(EC)]-family physician; a nurse practitioner [RN(EC)] and midwife or a family physician and midwife,

2) Through a formal link with a group of care providers contracted to provide maternity care to the population served by the FHT (not necessarily on site) including,

   - Women with low-risk pregnancies cared for by family physicians or midwives (where available);
   - Women with high-risk pregnancies referred to obstetricians.

3) Through a referral network with other maternity care providers in the community allowing for referral to care providers of choice, including:

   - Women with low-risk pregnancies to family physicians, midwives or obstetricians (where locally available);
   - Women with high-risk pregnancies to obstetricians.

Primary Health Care Nurse Practitioner-Sequential Shared Care Model

In this model RN(EC)s are providing all pre and postpartum care for women who do not have a family physician who provides these services. Women are referred to a family physician or obstetrician for late prenatal care and labour and birth and then are immediately referred back for postpartum care in the community. This model has been adopted by public health units in Ontario that are under-serviced and where there are women who have no family physician and have relied on walk in clinics for health care. This model has received attention from the Canadian Medical Protective Association and the Canadian Nurses Protective Society[18] to ensure that practitioners in sequential models are clear about their scope of practice and responsibilities to refer as appropriate. New models that involve nurse practitioners collaborating with midwives have begun to emerge.

Issues for Rural/Remote Maternity Care

In rural settings there are modifications to the scope of practice for all professionals. In some rural and remote settings in Ontario, for example, family physicians and/or midwives may provide care in settings without nearby surgical capacity. In these models of care, it is critical for the team to identify women who should be referred to a larger centre for labour and birth. As birth numbers are low in any given year, innovative call schedules may be established to ensure all team members are confident and skilled to attend births. This includes physicians, midwives and nurses who are involved in intrapartum care. Referral to larger centres, including evacuation plans, is normally well established in such practices and the community recognizes the need. Patterns of care may also be adapted depending on time of year or the weather. Travel is more unpredictable at certain times of the year. Location of the nearest referral centres and airports are considered.

Rural family physicians may acquire additional skills to provide comprehensive primary maternity care where obstetricians, anaesthesiologists and paediatricians are not locally available. This may include the ability to perform Caesarean sections, epidural anaesthesia, advanced neonatal resuscitation, etc. In remote communities, midwives and nurses also acquire skills and play the roles that are needed to meet community needs. These rural models typically have low volumes and require practitioners who are committed to careful risk screening of women and newborns and planning for the small proportion of families whose births may not be suitable to take place in rural and remote places.

A multi-professional model is often used in a tertiary care environment that also has the responsibility for providing care for healthy, low-risk women in their catchment area as well as fulfilling the regional high-risk function. The majority of care is provided at a Level III facility. Care for women identified as having a high-risk pregnancy is coordinated between the primary care provider, who may be a family physician, midwife or general obstetrician, and a maternal-fetal medicine specialist. Women who require these services are best served by being referred to centres that can provide the comprehensive care they require to monitor, treat and evaluate risks throughout pregnancy. These centres are co-located with advanced neonatal services. Many different professionals, including nurses with advanced perinatal preparation such as acute care nurse practitioners, neonatologists, internal medicine specialists and social workers, can provide care. These centres often have over 2,000 births a year and are co-located with academic health sciences centres.

It can be a challenge in centres specializing in high-risk complex care to avoid treating all women as if they are “at risk”. Some high-risk centres have undertaken effective steps to preserve and promote a low-risk model of care, inclusive of multi-professional provision of low-risk maternity care, within the tertiary setting. This is ideal and preserves opportunities for learners and appropriate low-risk care providers to manage the care for these women. A different multi-professional model may be required for women who are socially disadvantaged but are experiencing a straightforward pregnancy. In these models the most responsible care provider may be a family physician or midwife with multiple other professionals providing care as required including social workers, dieticians, and others.

Anaesthesia Services for Maternity Care Models in Ontario

In the development of maternity care models a number of considerations for anaesthesia services must be considered. A majority of Ontario women request pain relief during labour and birth, with epidural anaesthesia being the most common option. Anaesthesia services for labour and birth cannot be planned in advance, which requires 24-hour on-call coverage. Only in the largest hospitals is it possible to provide an anaesthesiologist in less than 30 minutes, 24 hours a day, 7 days a week. However, in order to be able to do a Caesarean section, anaesthesia service must be available within designated timeframes.

In a tertiary care centre the likelihood of requiring anaesthesia is increased, but it is also more predictable given pre-labour consultations for women at risk, planned Caesarean births, management of multiple births, and post anaesthetic care. If a model is designed for community or rural and remote settings, anaesthesia services may be prioritized for surgical deliveries. However, in any model analgesia and anaesthesia considerations are key to planning which services will be provided, who will provide them, reasonable expectations for referral and administration, and processes for referral from other providers including midwives and nurses.

Communities will have to determine if there are enough anaesthesiologists available to establish a call schedule or whether care will be provided by a GP anaesthetist. While there has been some discussion at the federal and provincial levels about creating nurse anaesthetists or respiratory therapist anaesthetists[19], over the next 5 to 10 years there would be insufficient numbers of these professionals to fundamentally alter the maternity anaesthetic care models. Initially these new professionals would be most likely to be employed in tertiary centres working very closely with academic anaesthesiologists.

Regardless of model type, all maternity care units should have in place a method to deal with obstetrical/fetal emergencies (including evacuation to another centre), when required. Appropriate access for primary care providers to obstetric consultation is critical in addressing anaesthesiologists' concerns about ensuring that the anaesthesiologist is not put in the position of having to make obstetric decisions.

Centres should also consider alternatives to pharmacologic pain relief and research indicating the importance of one-to-one support in labour as a key to effectiveness of non-medical strategies.[20]

For a full report from P Angle please see Appendix D

Maternity Centre of Hamilton (MCH)

The Maternity Centre of Hamilton model provides maternity care in a unique model in an urban setting where there is a shortage of family physicians. The MCH model involves easy access, timely visits and referrals, and care provided principally by a family physician/nurse practitioner team in collaboration with dedicated inter-disciplinary partners. This is a fundamental departure from the conventional doctor's office where the physician functions in isolation, and incorporates maternity care with ongoing family practice. The team at the MCH includes social workers, public health nurses, a lactation consultant, dietitian and a physiotherapist. This collaborative team has established links to community services which help meet the needs of pregnant women and their families from a growing population of families new to Canada and others facing socio-economic challenges.

The model includes prenatal visits, referrals to specialists, on site prenatal classes, intrapartum and postpartum hospital care, and postpartum maternal and newborn follow up, including postpartum information classes. A key feature of the model is linking the families with their referring physician or collaborating with this community's group of family physicians to establish the family with a doctor close to their home. These activities of the model involve enormous time and collaborative effort of the entire team along the course of the maternity cycle. The birth and social outcomes, from preliminary observation, are superior to care outside the MCH model.

(The Maternity Centre of Hamilton Annual Report, 2001)[2]

Multi-disciplinary Maternity Care

"I think a central area where all maternity care services were under one roof would be nice. If you get your appointment, take care of your blood work, your ultrasound, everything in one area, especially for people who have transportation issues, you know, and childcare issues as well. If you have other children, you know, to have to take them on a bus to go for your OB appointment and then to have to go to the lab for blood work and then to have to go somewhere else to get an ultrasound, you know that can be difficult."

Rural Participant (Integrated Maternity for Rural and Remote Communities Project)

Inter-professional Models of Maternity Care

Although there has been much discussion at the federal[22] and provincial levels[1,10] about models of practice that integrate all care in inter-professional models, there are few currently established practices using integrated models of care – in part because of the barriers discussed in the chapter on Regulation, Liability Issues and Funding of Maternity Care. That said, these models are ideally suited to primary maternity care for women experiencing low-risk pregnancies, whose care can be provided by members of different primary health care professions.

In an inter-professional model of maternity care, the following professionals may be involved:

- A RN(EC) or a registered nurse may provide prenatal care in early pregnancy shared with other team members,
- A family physician or obstetrician or midwife may provide late pregnancy prenatal care,
- A registered nurse would care for women in labour and birth and the birth could be attended by an obstetrician, family physician or a midwife,
- Registered nurses, lactation consultants, public health nurses, and/or midwives and family physicians provide postpartum care.
- The professional who attended the birth would conduct maternal six-week check ups.

South Vancouver Inter-professional Model

The model is an innovative approach to providing care to women and their families from a diverse neighbourhood in Vancouver. It features group prenatal care and education with 8 – 12 women per group for 10 sessions. These sessions are led by public health nurses and a midwife or family physician, the midwife or family physician provides the physical examination through a 3-minute "belly check". Each woman is also assigned a doula. Doulas are recruited from the local community representing the diverse cultural and language groups in the neighborhood. All births take place at BC Women's and Children's Hospital. During labour and birth nurses and doulas provide care and support for each woman and the family physicians or midwives attend the birth. Postpartum care is shared between the prenatal care providers and then women return for continuing care to their regular family physicians.[7,21]

Creating the Conditions for Collaboration in Maternity Care Practice

The following list is often associated with inter-professional or multi-disciplinary maternity care teams. OMCEP recommends collaboration as an integral part of all models:

- Open honest communication
- Mutual trust and respect
- Understanding and valuing each other's perspectives and way of thinking
- Familiarity with and valuing each other's style and scope of practice
- Equality and shared power
- Professional competence
- Shared responsibility and accountability
- Shared decision making
- Shared values, goals and vision
- Willingness to share information
- Common approach and mutual support
- Willingness to devote time and energy to relationship
- Frank discussion and resolution of financial issues

Adapted from: Definition of multi-disciplinary collaborative maternity care for MCP[22]

Inter-professional Models of Maternity Care will require a number of issues to be addressed prior to full implementation. The issues are described more fully in other chapters and include:

- Provincial coordination that ensures inter-professional models of care are not competing with other models which would create redundancies in the delivery of care
- Monitoring and evaluation of outcomes that can be compared to other models of maternity care practice
- Liability insurance that is appropriate for team practice
- Regulations that are congruent with the ability of care providers and that encourage and support collaboration
- Funding that is appropriate for each team member, recognizing the differing education and on-call requirements of different members of the team. Funding needs to encourage collaboration, not be a barrier and create resentment within the team
- Care plans that are acceptable to women and their families that are balanced with maternity care providers

- Inclusion of appropriate team members who are allowed to work to their full scope of practice

Inter-professional models of maternity care must be accessible to learners in the professions so that the core competencies are role-modeled to the next generation of professionals. By providing these clinical experiences for learners, the maternity care providers will be able to demonstrate adaptable, women-centred models of care that may help mediate the effect of provider shortages.

While intrapartum care has become the focus of shortages experienced by maternity care providers, the importance of inter-professional models may be more crucial in the pre-pregnancy, prenatal and postpartum periods of care, i.e., in assuring access to the full continuum of maternity care services.

Nunavik Midwifery: In the Inuit Villages of Northern Quebec

This is a midwifery led inter-professional model of care in birth centres co-located with health centres in these remote communities. Established in response to community activism in 1986, it brought birth back to the Inuit communities after decades of evacuation. Midwives, family physicians and nurses provide prenatal, intrapartum and postpartum care to women in seven villages on the east Hudson coast (population 5,500). Births occur in three villages: Puvurnituq, which has a Level 1 hospital, Inukjuak and Salluit. Each village has about 30-60 births per year. An inter-professional team reviews the care plan for each woman, including place of birth. Eighty percent of women from the coast give birth in Nunavik. Rates of transfer intrapartum and post partum are 10% including both mothers and babies. Midwifery education for local Inuit women is central to the model and allows care to be provided by Inuit women in the language and culture of the region. This model has been cited by the Royal Commission on Aboriginal Affairs, WHO, FIGO, ICM, and the SOGC as a model for remote communities.[8]

Choice of Birthplace

Choice of birthplace includes birth in rural and remote communities, home births and birth centres. This requires models of care to be adaptable enough to provide choice to women.

Out of hospital birth, whether in freestanding birth centres or in women's homes, tends to be a controversial issue. Midwives in Ontario, as in many European countries, are required by standards and regulation to attend women in the birth place of their choice, after careful screening and education about potential limitations and risks as well as the benefits.[15] Models of care that include midwives in inter-professional groups need to address this responsibility.

The Task Force on the Implementation of Midwifery in Ontario documented a consensus between the professions that if women choose home birth, they should be attended by well educated midwives who have access to hospital if complications arise.[23] This

consensus has been the basis for the care provided to the over 10,000 women who have had home births since midwifery has been legally recognized. About 20% of these women transferred from planned home births to hospital in labour (Ministry of Health and Long-Term Care OMP), usually to the hospital where the attending midwife has admitting privileges. In hospital the midwife can continue to provide primary care and/or consult with obstetrical colleagues or transfer care to medical and nursing staff, as indicated.

What is more controversial is the question of whether choice of out of hospital birth should be promoted. This debate is international[24-27]even in countries where home birth is seen as a norm, such as Holland.[28] OMCEP heard that for many in the maternity care professions, it is self-evident that the access to additional personnel and technology that most hospitals in Ontario offer makes birth safer, although there is a growing literature exploring the safety of out of hospital birth.

To date the research literature on the relative safety of home birth vs. hospital birth is inconclusive. Most evidence is retrospective observational data[29] and there is minimal data from randomized controlled trials comparing home and hospital birth. The Cochrane review notes that "a meta-analysis of observational studies have suggested that planned home birth may be safe and with less interventions than planned hospital birth. There is no strong evidence to favour either planned hospital birth or planned home birth for low-risk pregnant women". A recent prospective study of 5, 418 births published in the British Medical Journal showed similar perinatal outcomes with lower rates of intervention in the home birth group. [30]

The following is from Society of Obstetricians and Gynaecologists of Canada (SOGC) March 2003 policy statement on midwifery:

> *The SOGC recognizes and stresses the importance of choice for women and their families in the birthing process. The SOGC recognizes that women will continue to choose the setting in which they will give birth. All women should receive information about the risks and benefits of their chosen place for giving birth, and should understand any identified limitation of care at their planned birth setting. The SOGC endorses evidence-based practice and encourages ongoing research into the safe environment of all birth settings.*[31]

The College of Physicians and Surgeons of Ontario had a policy against home birth until 2001 when its President noted the need to "recognize home birth for low-risk women is a viable, if not widely practiced option". The College noted that "A review of the scientific literature indicates that there is no compelling evidence either supporting or opposing planned home births for low-risk patients".[32] OMCEP notes the consensus that women who choose home birth should be well informed, well screened and receive excellent care. Debate remains about the promotion of out of hospital birth and more research, discussion and dialogue is needed on this topic.

The same debate exists about birth centres. Quebec has established seven birth centres and recently announced that it is a government priority to improve access to birth centres and that 21 "maison naissance" will be opened around the province over the next ten years.[33] In some aboriginal communities, home births and births in community health centres are seen as part of tradition and culture and are an important component of community life. The National Aboriginal Health Organization reported on four community birthing centres that have been established in Aboriginal communities: in Akwesasne, in Oshweken, in Nunavut and the centres in Nunavik.[6] We heard from aboriginal stakeholders in Ontario about a need, in both rural and urban settings, for culturally appropriate birth centres for aboriginal women.

OMCEP members reviewed the existing literature on maternity care offered through birth centres and concluded that birth centres could be a valuable option in some communities.[34-36] Panel members recognize that there may be some apprehension in Ontario to this innovation in our health care system. The members therefore advise a systematic approach to evaluation that will ensure safety and quality in care. Because this is an area of debate we have summarized the various perspectives that we heard on this topic.

Some see birth centres as a middle ground between home and hospital births as they can be located near to hospitals and are accessible to women whose homes may be unsuitable for birth. Those hoping to create environments that support a woman and family-centred low intervention style of care see out of hospital birth centres as an essential option that might help reduce rates of intervention and the costs associated. Advocates see birth centres as a public space, which visibly represent normal birth as part of the community and promote public and professional confidence in physiologic birth. Some see birth centres as an ideal place for inter-disciplinary education and research about normal birth. During consultations we heard hesitations about establishing birth centres in an environment of limited resources where funding and care providers are limited. Some who strongly support the need for innovative approaches to supporting low intervention care want birth centres or low-risk units established inside the hospital rather than separately. Others were hesitant to establish birth centres as they feel that the principles of woman and family-centred care should be applied to all women in all settings. Those who feel that all of the services available in hospitals should be accessible for all births have concerns, for example about options for pain relief.

In 1994 the Ontario government approved proposals for six free standing birth centres around the province[37] and sponsored a collaborative process between the regulatory colleges for physicians, nurses and midwives, which developed facility standards and practice parameters for birth centres as Independent Health Facilities in which a multi or inter-disciplinary team could work. These proposals and the policy documents developed could be adapted to new initiatives.

Tsi Non:we Ionnakerastsha Ona:grahasta: Six Nations Maternal and Child Centre

Oshweken, Ontario

The centre is located on the Six Nations of the Grand River Reserve. Full-time aboriginal midwives provide traditional and contemporary midwifery services. The community, family and expectant woman are offered a choice of services that compliment and support personal beliefs and customs. Between 1996 and 2002 the centre provided care to 252 women. The centre is also a training site for aboriginal midwives.[6]

Centres of Excellence for Normal Birth

OMCEP recommends that Ontario should develop incentives for the creation of Centres of Excellence for Normal Birth (both within and outside existing settings) that will foster a culture of minimal interventions for low-risk births, inter-disciplinary care and an educational environment for the promotion of these principles. These environments will function as centres of excellence in the provision of maternity care based on the guiding principles expressed in this document.

Birth Centre Demonstration Projects

In order to evaluate the efficacy, efficiency and effectiveness of Birth Centres in models of maternity care there need to be a number of considerations:

- Multi-site evaluation and comparison across birth centres
- Rigorous research design and methods established a priori that allow for direct comparison with other care models
- Specific goals, objectives, and outcomes measured by women, families, care providers, and the community
- Primary health care provider led teams
- Established links to existing maternity services in the community and academic health sciences centres
- Clear policies and procedures that allow for effective screening, monitoring and referral as necessary.
- Provide an excellent teaching environment for learners in nursing, medicine and midwifery.

Conclusions

Throughout our deliberations, OMCEP has been mindful of other maternity projects as well as the literature and presentations at conferences – all of which highlighted that there are many different models that can be examined or adapted to fit particular community needs. OMCEP strongly supports the notion that there is no one model that will be

suitable in all settings in Ontario. We also made no attempt to rank them, as the best model is the one that fits the community, and that aims to realize our vision for maternity care in Ontario in that setting – that every woman has access to high quality, woman and family-centred maternity care as close to home as possible.

1. Rogers J. Integrated maternity care for rural and remote communities. A proposal to the Primary Health Care Transition Fund, Health Canada. 2004.
2. The Maternity Centre of Hamilton. Annual Report: December 2001 - December 2002.
3. Goertzen J. Maternity care by family physicians: characteristics of successful and sustainable models [letter]. JOGC 2005;27(10):933.

4. Thunder Bay Collaborative Maternity Centre and Chronic Disease Management Centre, Primary Health Care Transition Fund, Health Canada. 2004.

5. Orrantia E, Poole H, Strike J, Zelek B. Evaluation of a novel rural obstetrical care model. Presentation to Canadian College of Family Physicians, Family Medicine Forum, 2004 Nov.

6. National Aboriginal Health Organization. Midwifery and aboriginal midwifery in Canada. 2004 May 28.

7. Maternity Care Enhancement Project. Supporting local collaborative models for sustainable maternity care in British Columbia. British Columbia Medical Association, Ministry of Health Services. 2004 Dec.

8. Epoo B, Nastapoka U, van Wagner V. Bringing birth back to the community: midwifery in the Inuit villages of Nunavik. Proceedings of the International Confederation of Midwives, 2005 Jul.

9. The Society of Obstetricians and Gynaecologists of Canada. Multidiscpilinary collaborative primary maternity care. A proposal to the Primary Health Care Transition Fund, Health Canada. 2004 Feb.

10. Ontario College of Family Physicians. Babies Can't Wait. Primary Health Care Transition Fund, Health Canada.

11. Nesbitt TS, Connell FA, Hart LG, Rosenblatt RA. Access to obstetric care in rural areas: effects on birth outcomes. Am J Pub Health 1990;80(7):814-8.

12. Nesbitt TS, Larson EH, Rosenblatt RA, Hart LG. Access to maternity care in rural Washington: its effect on neonatal outcomes and resource use. Am J Public Health 1997;87(1):85-90.

13. Biringer A, Carroll J, Van Wagner V, Medves J. Babies can't wait project. Collaborative maternity care scenarios and models. 2005.

14. Rogers J. Sustainability and collaboration in maternity care in Canada: dreams and obstacles. Can J Rural Med 2003;8(3):193-8.

15. College of Midwives of Ontario. Registrants binder. December 2005. Available from: http://www.cmo.on.ca

16. Child Health Network of the Greater Toronto Area. Strengthening the maternal, infant and newborn system by design. Toronto; 2005 Mar.

17. Ministry of Health and Long-term Care. Family Health Teams [public information]. Available from: http://www.health.gov.on.ca

18. Canadian Medical Protection Association, Canadian Nurses Protective Society. Joint statement on liability protection for nurse practitioners and physicians working in collaborative practice. 2005 Mar.

19. Perry TR. The certified registered nurse anesthetist: occupational responsibilities, perceived stressors, coping strategies, and work relationships. AANA Journal 2005 Oct;73(5):351-6.

20. Hodnett ED, Gates S, Hofmeyr GJ, Sakala C. Continuous support for women during childbirth. The Cochrane Database of Systematic Reviews; 2003 Issue 3.

21. The South Vancouver Birth Programme: A new model of maternity care. Collaboration for Maternal and Newborn Health Conference: Maternity Care in the 21st Century. Vancouver; 2005 Feb.

22. Multi-disciplinary Collaborative Primary Maternity Care Project. Definition of multi-disciplinary collaborative maternity care for MCP^2. Available from: http://www.mcp2.ca

23. Eberts M, Edney R, Kaufman K, Schwartz A. Task Force on the implementation of midwifery in Ontario. Ontario Ministry of Health; 1987.

24. Royal College of Midwives. Homebirth handbook: volume 1: promoting homebirth. RCM Trust, 2002.

25. Enkin M, Keirse MJNC, Neilson J, Crowther C, Duley L, Hodnett E, et al. A guide to effective care in pregnancy and childbirth. Third ed. New York: Oxford University Press; 2000.

26. de Costa CM, Robson S. Throwing out the baby with the spa water? MJA 2004;181(8):438-40.

27. Department of Health. National service framework for children, young people and maternity services. Part III: Maternity services. United Kingdom 2004 Oct 4.

28. De Vries R. A pleasing birth: midwives and maternity care in the Netherlands. Temple University Press; 2005.

29. Olsen O, Jewel MD. Home versus hospital birth [Cochrane review]. The Cochrane Library, Issue 1 2006.

30. Johnson KC, Daviss BA. Outcomes of planned homebirths with certified professional midwives: large prospective study in North America. BMJ 2005;330:1416.

31. Society of Obstetricians and Gynaecologists of Canada. Midwifery. SOGC Policy Statement No. 126, 2003 Mar.

32. Borsellino M. CPSO softens and upgrades stance on home birth. Medical Post Newsletter 2001 Mar/Apr.

33. Birth centres: The Quebec experience. Collaboration for Maternal and Newborn Health Conference. Vancouver; 2006 May 5.

34. Rooks JP, Weatherby NL, Ernst EKM, Stapleton S, Rosen D, Rosenfield A. Outcomes of care in birth centers. The National Birth Center Study. New Engl J Med 1989;321:1804-11.

35. Jackson DJ, Lang JM, Swartz WH, Ganiats TG, Fullerton J, Ecker J, Nguyen U. Outcomes, safety, and resource utilization in a collaborative care birth center program compared with traditional physician-based perinatal care. Am J Public Health 2003 Jun;93(6):999-1006.

36. Hodnett ED, Downe S, Edwards N, Walsh D. Home-like versus conventional institutional settings for birth. Birth 2005 Jun;32(2):151.

37. Ontario Ministry of Health. Ontario women get greater choice in childbirth [news release]. 1994 Mar 4.

REGULATION, LIABILITY PROTECTION and PAYMENT:

The Structures of the Maternity Care System

Introduction

High quality maternity care systems share a number of common structures, through which safety and standards of practice are maintained – a legislative/regulatory framework to govern standards and scope of professional practice; liability protection for health care providers and a compensation framework for maternity care providers.

The panel heard from many stakeholders that certain aspects of Ontario's legislative/regulatory framework and our funding and liability protection systems were resulting in unintended barriers to positive change and innovative and collaborative approaches to maternity care. This constrains Ontario's role as a leader in maternity care as other provinces have already begun to align maternity care strategies with wider strategies for primary health care, including emerging collaborative care initiatives. There is virtually universal agreement among panel members and health care providers: better coordination among the systems that support maternity care is urgently needed and could allow Ontario to reassume a leadership role in this important area of health care innovation.

Regulating Maternity Care

Regulatory colleges for nurses, midwives and physicians establish regulations, standards, policies and by-laws to govern the registration requirements and scopes of practice for each professional group under the umbrella of the Regulated Health Professions Act.[1] The Public Hospitals Act[2] governs the services maternity care providers offer in hospitals. The Independent Health Facilities Act[3] governs other health facilities outside of hospitals.

Current regulatory regimes in Ontario are not responsive to advances in maternity care knowledge and practices. They inhibit, rather than encourage, the evolution of inter-professional and multi-professional patterns of service delivery.

One example of the way regulatory rigidity can compromise quality of care and value for money in maternity care services that was raised in stakeholder consultations with hospital, midwifery and physician groups related to the need to bring midwifery regulation up to date.

Ontario was the first province in Canada to regulate midwifery but both the Association of Ontario Midwives (AOM) and the College of Midwives of Ontario (CMO) report that the profession encounters great difficulty in updating regulations to reflect growing knowledge or even to reflect practice changes already in place in other provinces.

The inflexibility of Ontario midwifery regulations means midwives in Ontario have difficulty keeping in step with advances in maternity care and national midwifery and medical standards of care. For example, midwives in Ontario are licensed to prescribe specific drugs according to regulation.[4] The intent was to facilitate routine care during pregnancy, labour and birth and in the postpartum period. Unfortunately, the College has found itself unable to update the regulation in a timely manner as new drugs have been

approved and adopted. This creates a serious barrier to midwives' ability to provide care in accord with best practice guidelines and, since they must turn to physicians to prescribe the more efficacious medications, to practice to their full scope. The pharmacopoeia of Ontario midwives is less inclusive of routine treatments than in other provinces more recently regulated.[5-7] This creates frustration for all professionals involved because of the need for medical consultations in routine situations so that specific treatments can be applied (e.g. Group B Strep prophylaxis). It also creates additional costs to the system as physicians are required to provide *pro forma* approvals for courses of treatment that all care providers know are appropriate.

> *"The umbrella of legislation, regulation and standards over maternity care should be looked at together. Current legislation and regulations will need revisions in the near future for a viable sustainable maternity care system in Ontario."*
>
> *OMCEP Focus Group Participant*

There are also problems with the governance system to permit physicians and registered midwives to obtain admitting and discharge privileges in acute care hospitals (where about 98% of all births occur), through the Public Hospitals Act. All mothers and babies admitted to acute care facilities need to have "a most responsible provider" (MRP). Present legislation in Ontario has allowed for hospitals to revise by-laws to allow either midwives or physicians to be the MRP.[8]

Although each maternity care profession has its own established and regulated scope of practice, individual hospitals can place additional limits on their scope within the institution, creating community-to-community differences between service models and some role confusion.

Since the regulation of midwifery in 1993, hospitals have implemented various approaches to the by-laws and scope recommended in the 1994 Ontario Hospital Association document, *The Integration of Midwifery Services into Hospitals.* A 2001 coroner's recommendation directed that this document be revised to assist hospitals to establish policies clarifying the role of midwives as the MRP. The coroner's report also recommends[9] that hospitals use the College of Midwives of Ontario standard Indications for Mandatory Discussion, Consultation and Transfer of Care [10] as the basis for local consultation and transfer of care protocols.

Similar hospital-to-hospital variations also affect family physicians and nurse practitioners in some settings. OMCEP recommends that all Ontario facilities providing maternity care support providers to work to the full extent of their regulated scope of practice to maximize existing human resources in maternal and newborn care. This is in keeping with recommendations from the Health Council of Canada[11] to: "Enhance opportunities for professionals to work to optimal scope of practice to ensure the system's capacity to meet local patient and population health needs"; and "Changes should be implemented in how work is organized to better match skills and scopes of practice to patient/client needs, and progress on these changes should be publicly reported".

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Such regulatory bodies as the College of Physicians and Surgeons of Ontario, the College of Midwives of Ontario and the College of Nurses of Ontario, have recognized the need to work together in support of the maternity care sector. They have begun to jointly consider issues related to the Regulated Health Professions Act as part of the Federation of Ontario Regulatory Colleges. There is broad agreement among the CPSO, CMO and CNO about the need for a more flexible process to facilitate necessary changes including, for example, an approach to drug regulations that identifies classes of drugs and indications rather than naming specific drugs.

OMCEP suggests that regulatory bodies continue in these positive directions, developing formal and ongoing partnerships to review emerging care practices within the continuum of maternity care as well as their own individual profession's scope. Colleges should identify any cases in which regulation, compensation systems and liability issues are having unintended negative impacts on the evolution of progressive models of maternity care.

Midwives in Hospitals in Ontario

- In 2004-05, 78% of women in the care of midwives gave birth in the hospital setting
- Since 1994, 2/3 of Ontario birthing hospitals (over 65 hospitals) have provided admitting privileges to midwives
- In 2004, of 50 midwifery practice groups in Ontario, over 20% reported limits on new midwives getting privileges, restrictions on scope of practice or limits on the number of women they could attend
- In some communities, hospital privilege restrictions appear to be present despite recruited midwives and a shortage of other maternity care providers
- Currently about 60 new midwives enter the system annually from provincial educational programs and an international bridging program (Ministry of Health and Long-Term Care Ontario Midwifery Program)

It is also time for the Ministry of Health and Long-Term Care and Colleges to consider expanded roles for nurses and midwives providers working in "special" environments to enable care to be provided closest to home and in a culturally sensitive manner. This might include first assist for Caesarean section[12] in rural and under serviced areas, use of vacuum-assisted birth in urgent situations and repair of third or fourth degree perineal tears for midwives where specialist care is not available. [13]

We recommend that the Colleges of Midwives, Nurses and Physicians work in partnership with Government to implement the following OMCEP recommendations. Technical recommendations are contained in Appendix A.

Liability Protection Issues

Risk identification and management is critical to improved perinatal care.[14] Risk assessment and risk management aims to enhance client safety during the course of care, leading to better outcomes and more informed consumer participation in care choices and decisions. The panel is concerned that current risk assessment and management approaches in Ontario may be adversely influencing both practitioner and family choices.

There are clinical risks inherent in childbirth: rarely but inevitably, adverse events can affect infants and/or their mothers, creating long-term health consequences ranging from minor to major, even if the care provided is optimal.

Risk identification and management in maternity care must also address litigation and liability risk. Rather than being based on medical probabilities, this family of risks is based on the possibility that the provider will face litigation and find her/himself involved in unavoidably stressful public confrontations.

When liability risk considerations dominate risk assessment and risk management, care providers and/or families can begin to lean towards higher intervention treatments, even where these treatments involve significantly higher costs and there may be little or no evidence that they provide any measurable health outcome benefits.[15,16] There continues to be significant debate about the costs and lack of evidence of benefits associated with intervention in childbirth.[17] Questions exist around procedures like continuous electronic fetal heart rate monitoring for low-risk labour,[18,19] labour induction and augmentation, repeat 'elective' Caesarean section, and primary Caesarean sections on demand.[20-24]

Research indicates that many maternity care providers have withdrawn from providing intrapartum care because of *perceived* (i.e., liability) risks to both families and providers, [25,26] reducing access to care.

Rates for professional liability protection (malpractice insurance) for professional providers in Ontario have steadily increased, far behind the United States, but ahead of all other provinces in Canada, leading to regionally differential premiums from the Canadian Medical Protective Association for physicians practising in Ontario.[27] Similarly, midwifery rates for liability protection have increased over the past five years.[28] Surveys of physician maternity care providers continue to show that liability concerns, even in the presence of premium reimbursements by government, continue to be a negative influence on physician recruitment, retention and maternity care career choice.[25,29-32] The Babies Can't Wait Project will provide further insights into the relative importance of medico-legal concerns to both career choice and willingness to work in collaborative models of care.[33]

Ontario Maternity Care Liability Protection Background

Three main national liability protection organizations provide errors and omissions coverage of maternity care providers. These are:

Canadian Medical Protective Association (physicians)
Hospital Insurance Reciprocal of Canada (midwives and most hospitals)
Canadian Nurses Protective Society (registered nurses and nurse practitioners)
Additional insurance organizations are involved in the provision of commercial general liability protection.

Based on 2005-06 rates, OMCEP estimates that approximately $64M is provided by Ontario in professional liability insurance premium reimbursements each year to family physician, midwife and obstetrician maternity care providers.

2006 Liability Insurance Rates and Reimbursements for Intrapartum Care Providers

Obstetricians –	rate: $78,120	reimbursement: $73,220
Family Physicians –	rate: $9,576	reimbursement: $8,376
Midwives -	rate: $39,269	reimbursement: $39,269

OMCEP supports the initiatives currently underway provincially and nationally to promote best practice and improve risk management. Programs such as MORE^{OB}, ALARM, ALSO, the Association of Ontario Midwives' Emergency Skills Workshop, ACoRN and Neonatal Resuscitation Programs have improved clinicians' skills and the management of maternal and newborn care in emergency situations. These programs share a focus on improving team practice as a positive factor to achieve reduced clinical and liability risk and enhance patient safety.

Current uncertainties about the liability risks involved in multi and inter-disciplinary teams are retarding the development of such team approaches. In March of 2005 the Canadian Medical Protective Association and the Canadian Nurses Protective Society published a joint statement on liability for nurse practitioners and physicians in collaborative practice.[34] In the statement, they acknowledge that evolving models of health care delivery have increased the opportunity for collaborative practice between physicians, nurse practitioners and other health care providers, and they say "collaborative practice inevitably reinforces the need for health care professionals to ensure that they individually have adequate personal professional liability protection and that the other health care professionals with whom they work collaboratively with are also adequately protected for the acts or omissions of another". [34] Our consultations

revealed an urgent need for a similar statement about working in teams involving midwives, nurses and physicians.

More recently, CMPA, CNPS, and HIROC presentations at the Multi-disciplinary Collaborative Primary Maternity Care Project (MCP^2) included a joint statement that will attempt to clarify liability protection for providers involved in a collaborative practice as well as institutional protection.[35] We support the ongoing development of system-wide initiatives aimed at benefiting the outlook for future inter-professional team practice.[36]

OMCEP's recommendations about liability structures focus on strategies to mitigate the unintended influences on maternity care illustrated in this report. The development of non-adversarial strategies for liability risk management strategy, including mediation and support for providers who are undergoing claims, while at the same time ensuring that mechanisms are put in place to support families who require ongoing special care, must be a priority within health human resources retention strategies for maternity care.[26,37]

For the longer term, we recommend that the province explore broader reform to the tort system to provide comprehensive support for families affected by poor birth outcomes, without families being required to pursue civil litigation of health care providers.[38]

A common recommendation OMCEP heard as part of its stakeholder consultation was for improvement to the liability protection system for maternity care providers. Maternity care providers told us that, despite good intentions to collaborate and innovate with inter-professional models of maternity care, misguided risk management advice undermines their success. This finding is reinforced by recent recommendations from the SOGC[35,36] and the Health Council of Canada.[11] Consequently, we provide the following broad recommendation:

That government work with the proposed Office of Maternal and Newborn Health to engage national insurers and provincial stakeholders in the development of a maternity care risk management strategy as part of its provincial maternity care plan. This strategy would promote an approach which puts perinatal risks in perspective as "normal life events with associated uncertainties" [39] **and promote realistic expectations regarding the inherent clinical risk associated with birth and the infrequent but potentially serious consequences. The strategy would support practitioners of different professions to work together to provide optimal care and addresses the incidence of claims and their effects on families, health care providers, institutions and future members of maternity care professions.**

Further technical recommendations follow in Appendix A

Funding Models for Maternity Care

There are a variety of funding models for maternity care providers in Ontario, each designed mainly to serve the needs of individual professions, rather than inter-professional groups of maternity care providers. These funding models have the

unintended result of promoting competition rather than collaboration among provider groups. Multiple systems of payment (described below) exist varying from salary and alternative payment plan models to fee for service that can create financial penalties for practitioners who share care. This reinforces isolationist, uni-professional attitudes and patterns of practice and retards the optimal development of functioning inter-professional maternity care teams and creating significant losses of cost-efficiency of maternity care in Ontario.

> "To remove financial disincentives to inter-professional practice, governments and professional associations should accelerate the shift to alternative, flexible compensation schemes that are based on more than a simple fee-per-visit."
>
> Health Council of Canada[11]

Stakeholder groups made it clear that funding arrangements can influence transfer of care and access to consultation, and expressed a strong desire for more efficient functioning of the funding mechanisms within the maternity care system. Improving mechanisms for midwives, nurse practitioners and family physicians to work to their full scopes will create cost-avoidance opportunities related to reduced duplication of services. For example, it is estimated that over 20% of consultations and transfers of care by midwives to physicians result from local protocols in excess of College requirements, [28,40] with consequent services being paid for twice.

Current Salary Models

Nursing and other practitioners such as Community Health Centre staff who are employed by a specific institution or agency are normally salaried. Nurses are generally employed by an acute care institution, community care access centre, or public health and are paid on an hourly basis, with or without benefits. Primary Health Care Nurse Practitioners are often paid a salary by a community-based agency.

Capitation and Course of Care Models

A family doctor who works in a capitation model is paid in accord with a system of patient rostering. Midwives and physicians under reformed fee for service models are paid according to a calculated fee per person or bundle of services. For example, midwives are paid one course of care fee, which corresponds to the average 40-50 hours covering the care of a women and her infant throughout pregnancy, labour, birth and for up to six-weeks postpartum.

Alternative Payment Plans

Alternative payment plans remunerate physicians on a salaried, reformed fee for service or sessional basis by funding agencies or organizations that then directly employ or contract with individual physicians that deliver services. This type of compensation involves capitation or a blended funding model for group practices as well as global/block funding for services at hospitals. In the past they have included primary

care networks, academic health science centres, group health centres, family health/networks (FHT, FHN), health service organizations (HSO), central and specialized program units (CSPU), and complement-based agreements (CBA).

Physician Fee for Service Payment Models

In this model the Ministry along with the Ontario Medical Association has structured a fee schedule as published by the Ontario Hospital Insurance Plan (OHIP). Fees for individual specialties and procedures are determined according to an averaging principal and are paid to each physician for services provided. There are professional billing thresholds. Fee for service is managed through Provider Services Branch of the Ministry of Health and Long-Term Care and physicians are accountable to the general manager of OHIP (Assistant Deputy Minister of Health), who administers the Health Insurance Act.

Physicians Special Incentives for Maternity Care

As family physician participation in maternity care declined, the Ministry initiated an incentive program in conjunction with the Ontario Medical Association. It included an exemption to the billing cap that had been imposed. It raised fees for providers of low volume intrapartum care by providing a 50% premium for the first 25 births if they occurred as the only delivery in a day. There was also an extension of the after-hours service premiums. More recently OHIP has also included a consultation fee for midwifery consultations, which heretofore had not been recognized in the system. Other incentives have included allowing for billing by family doctors for attendance at birth in the event that an obstetrician was required to deliver the baby. All this was intended to remove financial disincentives to appropriate consultation and thus to retain family physicians as birth care providers.

Other Incentives

A range of programs including the Under Serviced Area Program, Free Tuition Program and professional liability insurance reimbursements provide additional funding or incentives for practitioners, students and services for health care sectors with barriers to access. These interact with provider remuneration models to enhance support to families and to providers in health care specialties under pressure.

> "Financial incentives play a major role in whether health care providers embrace or resist in the mix of skills and responsibilities. How people are paid can either support or inhibit innovation. In particular, strictly fee-for-service compensation is widely viewed as discouraging collaborative care. Practice settings where teams are funded, rather than having the money flow through individuals, are free to organize care to best suit the needs of the populations they serve and to optimize the skill mix of their staff."
>
> Health Council of Canada [11]

OMCEP recommends action to harmonize this system, to recognize the equitable and complementary but different contributions of care providers in this demanding specialized field, and to provide incentives for desirable, high quality practice; there should also be a concerted effort to remove aspects of compensation that reward or fail to penalize undesirable approaches. The funding mechanisms should support primary maternity care, inter-disciplinary care and the provision of services as close to home as possible. In particular, a system to compensate specialists fairly for consultations with primary care providers is a vital aspect of supporting low-risk and low volume approaches to care and innovative models of practice.

Further technical recommendations are contained in Appendix A.

1. Regulated Health Professions Act, 1991, S.O. 1991, c. 18.

2. Public Hospitals Act, R.S.O 1990, c. P.40.

3. Independent Health Facilities Act, R.S.O 1990, c. 13.

4. College of Midwives of Ontario. Regulation made under the midwifery act, 1991. Designated drugs. 1994 Jan, Revised 2004 Sep 26.

5. Government of British Columbia. Midwives Regulation. Schedule 1 - Drugs and Substances. 1995 Mar, Revised 2005 Jul.

6. Government of the North West Territories. Midwifery Profession: Prescription and administration of drugs and other substances regulations. R-003-2005. 2005 Jan 29.

7. Government of Manitoba. Midwifery Regulation, Man. Reg. 68/2000 Schedule B Medications. Regulation made under the Midwifery Act C.C.S.M. c. M125. 1997 Jun 28, Updated 2002 Nov 15.

8. Ontario Hospital Association. The integration of midwifery services into hospitals. 1994. Available from: http://www.oha.com

9. Atcheson K. Eighth annual report of the obstetrical review committee to the Chief Coroner of the province of Ontario. 2002 May.

10. College of Midwives of Ontario. Indications for mandatory discussion, consultation and transfer of care. 2000 Jun. Available from: http://www.cmo.on.ca

11. Health Council of Canada. Modernizing the management of health human resources in Canada: Identifying areas for accelerated change. Report from a national summit. 2005 Jun 23.

12. College of Family Physicians of Canada, Society of Rural Physicians of Canada, Society of Obstetricians and Gynaecologists of Canada. Joint position paper: Training for rural family practitioners in advanced maternity skills and Caesarean section. Available from: http://www.cfpc.ca

13. Van Wagner V. Expanded roles/scope of practice (class) for midwives: A proposed framework for considering the role of midwives in supporting local maternity care. Submission to Ontario Maternity Care Expert Panel; 2005 Jun.

14. Milne JK. Patient safety—no excuses. SOGC Newsletter 2005 Summer:3.

15. Johanson R, Newburn M, Macfarlane A. Has the medicalisation of childbirth gone too far? BMJ 2002;324:892-95.

16. Resnik R. Can a 29% Caesarean delivery rate possibly be justified? [editorial]. Obstet Gynecol 2006 Apr;107(4):752-4.

17. Family-Centred Maternity and Newborn Care, 4th ed. Prepared for Health Canada and the Canadian Institute of Child Health. Health Canada, 2000.

18. Thacker SB, Stroup D, Chang M. Continuous electronic heart monitoring for fetal assessment during labour [review]. The Cochrane Database of Systematic Reviews 2001, Issue 2. Art. No.: CD000063. DOI: 10.1002/14651858.CD000063.

19. Menticoglou SM, Hall PF. The push against vaginal birth. BJOG 2002;109:485-91.

20. Society of Obstetricians and Gynaecologists of Canada. Caesarian section on demand - SOGC's position [media advisory]. 2004. Available from: http://www.sogc.org

21. Young D. The push against vaginal birth. Birth 2003;30(3):149-52.

22. The pervading controversies of VBAC. SOGC Express Report 2005:4.

23. Canadian Institute for Health Information. Giving birth in Canada: the costs. 2006.

24. Cyr RM. Myth of the ideal Caesarean section rate: commentary and historic perspective. Am J Obstet Gynecol 2006;194:932-6.

25. Reid AJ, Grava-Gubins I, Carroll JC. Family physicians in maternity care. Still in the game? Report from the CFPC's Janus project. Can Fam Physician 2000;46:601-11.

26. MacLennan A, Nelson KB, Hankins G, Speer M. Who will deliver our grandchildren? Implications of Cerebral Palsy litigation [commentary]. JAMA 2005;294(13):1688-90.

27. Canadian Medical Protective Association. Fee Schedule for 2006. Available from: http://www.cmpa-acpm.ca

28. Ontario Midwifery Program, Ministry of Health and Long-Term Care.

29. Reynolds L, Klein MC, editors. Recommendations for a sustainable model of maternity and newborn care in Canada. Proceedings of the Future of Maternity Care in Canada: Crisis and Opportunity; 2000 November; London, Ontario, 2001.

30. Smith LFP, Reynolds JL. Factors associated with the decision of family physicians to provide intrapartum care. CMAJ 1995;152(11):1789-97.

31. Woodward C A, Rosser W. Effect of medicolegal liability on patterns of general and family practice in Canada. CMAJ 1989;141:291-9.

32. Wiegers TA. General practitioners and their role in maternity care. Health Policy 2003;66(1):51-9.

33. Kasperski JM. Babies can't wait: primary care in obstetrics crisis. A solution focused PHCTF research project. 2004 Dec 9.

34. Canadian Medical Protection Association, Canadian Nurses Protective Society. Joint statement on liability protection for nurse practitioners and physicians working in collaborative practice. 2005 Mar.

35. Multi-disciplinary Collaborative Primary Maternity Care Project. Accountability, liability and malpractice. Available from: http://www.mcp2.ca

36. McNamee M. Are liability issues a barrier to collaborative care? SOGC News 2005 Winter:15.

37. Low JA. The current crisis in obstetrics. J Obstet Gynaecol Can 2005;27(11):1031-7.

38. Canadian Medical Protective Association. Alternative Patient Compensation Models in Canada. Available from: http://www.cmpa-acpm.ca

39. The future of maternity and newborn care in Canada: principles and recommendations. The Future of Maternity Care in Canada; London, Ontario; 2000 Nov 24-25.

40. College of Midwives of Ontario. When hospital policies differ from College standards. Available from: http://www.cmo.on.ca

Appendices

Ontario Maternity Care Expert Panel
Appendix A – Recommendations

The Ontario Maternity Care Expert Panel prepared two sets of recommendations with this report, 1) a one-page set of summary recommendations and 2) a detailed list of recommendations by theme.

The detailed recommendations on Women's Input and Access to Care and Public Education and Promotion are contained throughout the report. The other themes correspond to the major sections of the report: Maternity Care Strategy; Research, Data and Evaluation; Health Human Resources Planning; Education; Models; Regulation; Liability Issues and Accountability and Funding.

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Summary of OMCEP Recommendations:

The Ontario Maternity Care Expert Panel recommends that:

The Premier of Ontario direct the ministries of Health and Long-Term Care, Children and Youth Services, Health Promotion, Training Colleges and Universities and Attorney General to work together with professional organizations, regulatory bodies and educational institutions to take immediate action to address the impending maternal-newborn care crisis and ensure that women and families receive access to essential, high-quality, effective and sustainable maternity care services in Ontario by:

1. Increasing the number of maternity care providers and declaring a moratorium on maternity care program closures in communities that have sufficient health human resources to maintain safe services.

2. Immediately establishing an ongoing provincial maternity care program led by MOHLTC and regional networks of care providers and be responsible for:
    - Creating a sustainable maternal and newborn care plan for Ontario with full financial responsibility and accountability;
    - Integration of that plan across ministries, all regions and services;
    - Alignment of the maternity care plan with the government's transformation plan with maternity care as an integral part of primary care;
    - Ongoing performance measurement to ensure access to quality services.

3. Incorporating women's input into maternity care at all levels from informed decision-making about their own care to local, regional and provincial service planning policy.
4. Ensuring timely and equitable access to quality maternity care by committing to:
    - Primary maternity care delivered close to home;
    - Services that are responsive to the needs of diverse and vulnerable populations;
    - Woman and family-centred models of care;
    - Regionally coordinated access to high-risk care.

5. Create and undertake public and professional education campaigns to support a sustainable maternity care system and promote pregnancy and birth as a normal physiologic process with access to care for complications, as needed.
6. Attract, support and retain maternity care providers by developing a system that values and respects all provider groups, including midwives, nurses and physicians through harmonization of regulation and liability mechanisms and creation of complementary funding schemes.
7. Remove barriers to care and create structures that support:
    - The effective use of all care providers to their full scopes of practice;
    - Collaboration amongst professionals;
    - Innovative inter-professional models of education and clinical care founded on evidence-based guidelines and practices.

Women's Input and Access to Care

The Ontario Maternity Care Expert Panel recommends that the maternity care system:

1. Incorporate women's input into maternity care at all levels from informed decision making about their own care through local and regional service planning to provincial policy setting. Input should be specifically sought from women who encounter systemic barriers to the maternity system. Groups requiring specific consideration include:
    - aboriginal women
    - women in shelters and homeless women
    - uninsured women
    - abused women
    - immigrant women
    - women with language barriers
    - women of colour
    - disabled women
    - rural and remote women
    - single women
    - young women

2. That maternity care services and policy be delivered according to the following principles:

    Woman and Family Centred Care

    - Care across the continuum of maternity and newborn care
    - Equitable access to "Care as Close to Home as Possible"
    - Promotion of pregnancy and birth as a normal physiological process
    - Regional coordination of services and access to high-risk care
    - Woman and family centred care including:
        - Empowerment and participation
        - Informed choice
        - Choice of birthplace
        - Quality care to diverse and vulnerable populations
        - Continuity of care

    Principles of Service Provision

    - Valuing maternity care providers
    - Collaboration – inter-professional, respectful and seamless
    - Provider preparation, competence and confidence

Principles of Stewardship and Coordination

- Effective coordination of services
- Alignment of the system with national and international determinants of health
- Maternity care as part of primary care
- Continuous evaluation and improvement to ensure quality and safety
- Financial responsibility and accountability

3. That LHINs, regional networks and institutions work together to ensure women and families in Ontario's LHINs 1-12 can access primary maternity care services including pre-conception counselling, prenatal care, antenatal education, lactation support, newborn care and bereavement services in the community where they live and, in LHINs 13 and 14, within a one hour drive from home. Resources must be made available to ensure that women can begin primary care prenatal visits in their own communities as soon as they self refer for care.

4. That LHINs, regional networks and institutions work together to provide women and families in Ontario access to primary institutional birth services in their own communities with greater than 20 births per year and, as part of regional plans, access to secondary and tertiary level institutional birth services as close to home as possible according to provincially accountable plans.

5. That LHINs, regional networks and institutions work together to develop and distribute health human resources for primary maternity care to end the removal of pregnant women from communities to give birth unless individual complications require transfer or community volumes mean intrapartum care is not feasible. Where evacuation to distant birth services remains necessary because local services are not yet feasible or due to complications, funding supplements should be made available for accompanying family to travel, obtain meals and childcare in the referral community, as required.

6. That LHINs, regional networks and institutions work together to fund and support the regional planning of maternal fetal medicine, anaesthesia, complex neonatal services and perinatal psychiatric services so that, when they are needed, these specialized services are available as close to home as possible.

7. That MOHLTC expand funding for outreach maternity care programs such as the Fetal Alert Network and others that provide telemedical opportunities for technology to extend specialist expertise among communities with limited resources.

8. That LHINs, regional networks and institutions work together to make sufficient resources available on a regional level to enable women (and/or their newborns) to be transferred back to the appropriate level of services, as required, and back to their own communities as soon as possible after care for complications ceases to be required.

9. That 911 Emergency Medical Service (EMS) response be separate from inter-facility transport. Funding a system for inter-facility transport would ensure access to EMS vehicles for pre-hospital emergencies.

10. To provide for the differing transport needs for the Greater Toronto Area and the rest of Ontario, a distinct transport system should be developed for the GTA.

Public Education and Promotion

The Ontario Maternity Care Expert Panel recommends that:

1. That the Ministry of Health and Long Term Care and the Ministry of Health Promotion work together to fund and lead a joint public health/community health/hospital campaign aimed at maternity care providers, educators, hospitals, professional associations, regulatory colleges, insurers and the public. The campaign's objectives would include:

    - promoting birth as a normal physiological process;
    - providing information to all pregnant women and families on local care provider and service options so they can make informed choices about provider, service and birth place;
    - providing educational information to providers on the scope and role of all maternity care providers;
    - providing improved access to information on lifestyle choices for healthy women and families of childbearing age;
    - providing improved access to information on high-risk medical services, for women and families in need of these services;
    - highlighting issues such as evidence-based care options, professional retention, cost-effectiveness, collaboration and opportunities for inter-professional practise;
    - promoting maternity care to young Ontarians and health science program candidates as a positive career choice;
    - promoting among maternity care providers, insurers and the public an understanding and acceptance of the small inherent clinical risk associated with birth and evidence that supports lowered incidence of claims, rather than heightened incidence, when there is good communication and collaborative, respectful practice by care teams.

Maternity Care Strategy

The Ontario Maternity Care Expert Panel recommends:

1. That the Government of Ontario establish an Office of Maternal Newborn Health or equivalent mechanism, led by the Ministry of Health and Long-Term Care with expertise, resources and authority to link health divisions and other ministries to provide stewardship for maternity care in Ontario.
2. The Panel recommends the Office of Maternal Newborn Health be given a stewardship role that comprises:
    - Using population health principles to develop and maintain a provincial framework for the provision of maternity care services and work within the framework to approve regional plans
    - providing ongoing strategic direction for maternity services
    - setting priorities and targets for maternity care at the provincial level
    - improving the quality and consistency of maternity care across the province
    - harmonizing educational, legislative, regulatory, funding and liability insurance systems for maternity care
    - monitoring maternity care services across the province, and producing an annual public report on the performance of the maternity system
    - working with Local Health Integration Networks, provincial programs and stakeholders to ensure accountability and value for maternity care resources and optimal functioning of all aspects of the system
    - working with federal, provincial and territorial partners to keep in step with evolving strategies for maternity care, primary health care, women's health and newborn health.
4. OMCEP recommends each regional network reflect the composition of provincial maternity care programs including full inter-professional primary and acute care representation and women (recipients of maternity care services). Sufficient funding and provincial support should provide each regional network with the capacity to coordinate maternity care services and collect, analyse and interpret local and provincial data and to facilitate continuous improvement. When implemented, the Office of Maternal Newborn Health would increasingly depend on regional networks and LHINs to conduct local and regional planning and funding activities as the province advances its New Directions strategy.
5. That to enable consistent planning, development, implementation and evaluation of the system, government define maternity care as: the continuum of care that includes primary and specialized services provided to a woman from pre-conception, through pregnancy, labour, birth and to mother and newborn until 6 weeks to 2 months after birth.
6. That the Top Priorities of the Maternity Care Strategy should be:
    - Stabilize the maternity care system while the province develops a strategy for future maternity care service developments

- Incorporate women and families in the planning process at all levels
- Conduct a consumer and health care provider information campaign about available maternity care services and promote physiologic pregnancy, labour and birth
- Develop a minimum standard set of local, regional and provincially available maternity services
- Expand innovative service delivery models
- Conduct HR planning - including population health needs-based planning, recruitment, retention and succession for the maternity care sector
- Maximize capacity of education programs including: require all medical, midwifery and nursing programs to offer inter-professional maternity care education opportunities; effective recruitment into family practice maternity care and obstetric residency positions; and increase midwife entrant class sizes to meet demand for services
- Equitably fund and expand clinical placements for midwifery, family medicine, nursing and obstetrics, including residency and fellowship positions
- Create complementary inter-professional funding schemes and harmonize regulatory and liability protection systems
- Establish a provincial integration task force to address current barriers to inter-professional care
- Build LHIN, regional network public health unit advisory capacity to ensure delivery of population-based maternity care services and sector oversight
- Integrate maternity care data across divisions and ministries
- Increase accountability of service providers, agencies, programs

7. That an Integration Task Force address barriers to inter-professional care among maternity care teams in communities. Specifically, the group would provide operational support and educational to assist communities to maximize the integration and utilisation of midwifery and nurse practitioner scopes and services and to create interdisciplinary maternity care models. In addition, the Task Force would assist hospitals to:

    - alleviate credentialing restrictions on midwifery hospital privileges
    - alleviate restrictions on scopes of practice for nurse practitioners and midwives including seamless consultation and referral with specialists
    - establish and improve communication and dispute resolution processes
    - advise hospitals on the establishment of Departments of Midwifery and Professional Advisory Committees
    - advise hospitals on liability concerns related to inter-professional care and any concerns about the responsibility associated with being the 'most responsible care provider'

8. OMCEP recommends the Office of Maternal and Newborn Health be given a mandate to support internationally prepared maternity care providers (including physicians, midwives and nurses) to integrate into the maternity care system and maximize their contribution.

9. That the Office of Maternal and Newborn Health launch its approach for strategic, integrated population-based health planning by funding a provincial conference and consensus-building session to bring together key representatives in the evolving maternity system. The event will include members of the Office of Maternal and Newborn Health, regional and provincial structures and key advisors including: maternity care providers across all professions, existing and new regional perinatal partnerships, networks and stakeholder groups, government maternity care program representatives and LHIN representatives.

10. That, through the Office, the Government of Ontario identify, facilitate, support and maintain linkages with federal, provincial and territorial partners in order to keep in step with evolving strategies for maternity care, primary health care, women's health and newborn health.

Research, Data Integration and Evaluation

The Ontario Maternity Care Expert Panel recommends:

Research

1. That MOHLTC fund the Office of Maternal and Newborn Health to manage an ongoing grant for research into innovation and evaluation in the following areas of maternity care:

    - model development and implementation
    - inter-professional preparatory and continuing undergraduate and postgraduate education
    - rural and remote care
    - research and evaluation in maternity care
    - costing studies/cost analysis of maternity care
    - knowledge transfer and evidence dissemination
    - care to diverse and vulnerable groups with access barriers
    - models to promote stabilisation of the maternity care workforce

Data Integration

2. That the Attorney General remove systemic disincentives to birth registration to improve the completeness of Ontario's vital statistics data thereby improving the reliability of this important source of planning and evaluation information for maternity care.

3. That MOHLTC fund and coordinate the development of maternity care information to provide comprehensive decision support to all the ministry and external programs and agencies contributing to and planning for the maternity care system.

4. That as a short-term strategy, the MOHLTC expedite the linkage of existing sources of maternity care data to provide a first public provincial report on maternity care using 2005-06 data.

Evaluation

5. That the proposed maternity care strategy include a survey of women's satisfaction of the maternity care system which should be published in an annual public report.

6. That an ongoing evaluation plan be developed and implemented by the proposed Office of Maternal and Newborn Health using the performance measures and outcomes listed in Appendix E of this report.

Health Human Resources Planning

The Ontario Maternity Care Expert Panel recommends:

1. That one of the priorities of the provincial maternity care strategy be to create mechanisms to monitor and anticipate the population requirements of maternity care on an ongoing basis to achieve targets for an appropriate supply, mix and distribution of health human resources to meet those needs.

2. As part of a maternity care health human resources strategy, MTCU and MOHLTC work with all undergraduate education programs in medicine, midwifery and nursing to create a sustainable pool of providers.

3. That MOHLTC health human resources planning should aim to create a mix of intrapartum maternity care providers and to recover a sustainable pool of low-risk care providers.

4. In addition to the current expansion of medical and nursing schools, IMG positions and the designation of obstetrics and gynecology and family medicine maternity care as priority programs, the ministry should expand and support midwifery and maternity care nursing under the government's platform to improve access to primary care providers.

5. That all medical schools promote family practice maternity care and obstetrics as viable career choices.

6. That MTCU and MOHLTC support midwifery education programs to expand to meet demand as per the proposal invited by MCTU. Expansion of the midwifery programs should include advanced entry access for appropriately qualified nurses and increased access for aboriginal women. In addition, ways to maximize the capacity of the International Midwifery Pre-registration Program should be explored.

7. That all nursing schools promote maternity care and obstetrics as a viable specialty for new/ continuing nurses and nurse practitioners and increase the educational program capacity of nursing schools with the goal to producing a stable pool of maternity care nurses. Collection of accurate data on current maternity care nursing human resources trends and determining appropriate target numbers should be a top priority of a provincial unit.

8. That all medical schools promote obstetric anaesthesia with the goal to producing a stable pool of anaesthesiologists and family physician anaesthetists. Collection of accurate data on current maternity care anaesthesia human resources and trends and determining appropriate target numbers should be a top priority of a provincial unit.

9. That medical schools promote paediatrics with the goal to producing a stable pool of paediatricians. Projections for paediatricians should factor in the specific needs of the newborn population of the total specialty requirements and should similarly support the role of family physicians in newborn care as OMCEP has for family physicians in intrapartum care.

10. That the MOHLTC redefine its concept of 'under-serviced area' to include those communities that have insufficient prenatal, intrapartum (medical, nursing, midwifery), obstetrical anaesthesia and postnatal (including well woman/newborn and paediatric) maternity care providers and provide those areas with incentives to recruit sufficient human resources. This definition needs to take into account degrees of rurality including a designation specific to Northern LHIN 13 and 14.

11. That MOHLTC and educational institutions support research into effective recruitment and retention models for maternity care.

12. That, as part of a maternity care human resources planning strategy, the MOHLTC and Ministry of Citizenship create options for Ontario and/or international candidates to re-skill and return to maternity care practice.

13. That, as part of a provincial retention strategy for existing maternity care professionals, institutions and providers ensure that all caregiver groups are valued as part of the caregiver team and have working conditions that recognize the stresses of on call care. To this end, the maternity care strategy should develop specific direction and expectations of hospitals to provide supports to all members of on-call maternity care professional groups.

14. That regions, LHINs and institution planning include a forecast regarding existing provider's plans including leaves, retirement and relocation to inform future maternity care provider needs and create succession plans.

Education: Inter-professional, Preparatory, Postgraduate, Clinical and Continuing

The Ontario Maternity Care Expert Panel recommends:

1. That part of an ongoing maternity care strategy advisory group be a network of medical, midwifery and nursing health science programs charged with:
    - promoting intrapartum maternity care as a rewarding and valued career choice
    - maximizing the capacity of all programs to produce intrapartum maternity care providers as per OMCEP's recommendations
    - coordinating their activities with a maternity care human resource plan
    - creating a strategy for inter-institutional cooperation to provide inter-professional maternity care education
    - establishing a clinical teaching registry to maximize utilization of clinical placements and reduce competition between programs and faculties for limited spots
2. That all schools and faculties of medicine, midwifery and nursing:
    - provide maternity care education and maternity clinical practice that includes prenatal, intrapartum and post partum experiences
    - expose learners to primary maternity health care as well as high-risk care in tertiary facilities
    - provide early exposure of all students to normal prenatal/intrapartum/post partum maternity care as part of their curriculum
    - provide role modelling for maternity care as a rewarding and valued career choice
    - provide education which fosters confidence and competence in collaboration between professions, scopes of practice of all involved in maternity care and about multi and inter-professional models of care
    - incorporate input and evaluation from women, families and learners in the design and delivery of academic and clinical curricula
    - develop and deliver curricula on social, cultural and geographic differences that affect maternity care
    - provide education based on the OMCEP Principles of Maternity Care
    - deliver education specific to rural and remote care

3. That to ensure the sustainability of existing specialized service programs, MTCU, MOHLTC and medical programs ensure full funding and incentives to learners and teachers to support an appropriate supply of post-graduate maternal-fetal medicine specialists, obstetrical anaesthetists (including family physician anaesthetists), paediatricians and specialized perinatal nursing programs to meet the needs of Ontarians.

4. That MTCU support faculty leaders in midwifery and nursing to work together, with their respective regulatory bodies, and medical and hospital colleagues to create greater mobility between the nursing and midwifery professions. Approaches should be considered that address:
    - advanced entry/compressed programs for candidates with prior learning
    - dual registration considerations
    - options for clinical fellowships
    - options for research, graduate study and academic leadership
    - support for new models of practice involving nursing and midwifery collaboration

5. That the Office of Maternal and Child Health maintain clinical education agreements with every institution and community setting so that learners have access to the maximum number of maternity clinical experiences.

6. That to maximize Ontario's resource of experienced intrapartum teachers and mentors, MTCU and MOHLTC create an equitable system to remunerate maternity care providers to act as supervisors/mentors in the community for clinical placements and to facilitate inter-professional education.

7. That government offer incentives for providers to pursue educational opportunities to return to intrapartum clinical practice and/or to provide specialized services such as obstetrical anaesthesia, general surgery (for Caesarean section) prenatal care and newborn care.

8. That the Office of Maternal Newborn Health and the medical, midwifery and nursing programs work together to prioritize rural and remote maternity care education and clinical teaching by:
    - undertaking regional recruitment of undergraduate and graduate students agreeing to study maternity care
    - developing a standardized educational program for rural and remote maternity care
    - creating student placements in rural/remote maternity care, at core and elective levels, for medical, nursing and midwifery students
    - increasing the number of 3rd year medical/family practice placements in rural, small community and remote settings
    - offering incentives (or direct funding) to experienced maternity care providers to teach in rural and remote hospitals and clinic settings, and to act as supervisors/mentors for clinical placements
    - providing funding/grants/scholarships to students for placements in rural and remote areas

9. That LHINs and regions make available the necessary resources to low-volume hospitals to enable them to provide continuing education opportunities for staff to maintain intrapartum skills.

10. That MOHLTC fund health science programs to work with hospitals and regions to expand the use of information technology systems to support continuing education.

11. That MOHLTC direct and fund hospitals to allocate resources for continuing education for all providers, including but not limited to:
    - providing a lead local maternity care educator position, such as a perinatal nurse or midwife clinical leader
    - emergency skills training, including ALARM, MORE^{OB}, ALSO, Midwifery Emergency Skills, Neonatal Resuscitation Programs, ACORN
    - lab and imaging services for maternity care
    - public health maternity care
    - social work services
    - prenatal, postnatal and newborn care educators
    - lactation support services
    - bereavement services
    - Caesarean capacity
    - anaesthesia capacity

Maternity Care Models

The Ontario Maternity Care Expert Panel recommends:

1. That MOHLTC sustain and support existing and innovative models of maternity practice that are woman-centred, locally supported, developed and accountable, maximize scope of practice of care providers, and provide comprehensive maternity care as close to home as possible.

2. That hospitals, community agencies and providers coordinate their primary and high-risk services to ensure equitable access to women and families across the continuum of care and report gaps to the perinatal/LHIN region. This will require all agencies to collaborate to ensure seamless access to care for women and to link acute and tertiary maternal-fetal and neonatal services.

3. That MOHLTC support hospitals and maternity care providers to design maternity care models that can respond flexibly to the diverse needs of Aboriginal, immigrant and vulnerable communities within Ontario's population respecting that birth is a culturally celebrated event.

4. That MOHLTC establish and evaluate Centres of Excellence for Normal Birth, linked as clinical teaching sites with Academic Health Science Centres, which could include birth centres, units in Level 1 hospitals and collaborative models in Level II and III hospitals. These centres would facilitate interdisciplinary education and research to support low intervention models of care.

5. That MOHLTC work with regulatory bodies, professional associations and hospitals to remove barriers to integrated models of maternity care and to allow all maternity care providers to provide full scope of practice and reduce barriers to quality care.

6. That MOHLTC fund and reinvigorate the mandate of Public Health to re-establish itself as the lead for public health promotion, prenatal education, and newborn and women's health programs in Ontario.

Regulation

The Ontario Maternity Care Expert Panel recommends the Colleges of Midwives, Nurses and Physicians work in partnership with MOHLTC to implement the following OMCEP recommendations:

1. That government adopt a co-ordinated, omnibus approach to legislative/regulatory change and maintenance of the maternity care system, to provide women and families with the highest standard of maternity care and to provide options for inter-professional care. This approach is recommended to ensure:
    - legislation and regulation support the provincial maternity care strategy on an ongoing basis
    - Ontarians have access to and choice of all available maternity care providers and both established and innovative models of care
    - quality services continue to evolve according to the best available evidence
    - maternity care providers of all professions can share decision-making at the clinical, institutional and regional levels regarding clinical care, funding, regulation and liability
2. That the MOHLTC mandate the proposed new Office of Maternal and Newborn Health to work in partnership with regulatory colleges and ministry staff to deliver a comprehensive list of legislative and regulatory revisions within 6-12 months, to be implemented during the next legislative session. These revisions shall include amendments to:
    - the Public Hospitals Act to permit inter-professional participation in hospital governance and credentialing
    - regulation to enable the scope of practice of midwifery to be harmonized with other provinces, including expanded pharmacopoeia and use of classification or indication (rather than individual named drugs), newborn intubation, fetal scalp blood sample testing, venous blood sampling on newborns, performing necessary prenatal blood tests on biological fathers (e.g. Rh status)
    - midwifery and nursing regulations to permit extended roles and skills, e.g. for Caesarean section first assist role in rural and remote communities and, for midwives, vacuum assisted delivery
3. That the Office of Maternal and Newborn Health be mandated to investigate and make periodic recommendations to the Government on legislation and regulations that encourage best practice and/or eliminate barriers to collaborative, high quality maternity care, as evidenced by the best available research.

Liability Protection

The Ontario Maternity Care Expert Panel recommends:

1. That the Office of Maternal and Newborn Health to engage national insurers and provincial stakeholders in the development of a maternity care risk management strategy as part of its provincial maternity care plan. This strategy would promote an approach which puts perinatal risks in perspective as "normal life events with associated uncertainties" [39] and promote realistic expectations regarding the inherent clinical risk associated with birth and the infrequent but potentially serious consequences. The strategy would support practitioners of different professions to work together to provide optimal care and addresses the incidence of claims and their effects on families, health care providers, institutions and future members of maternity care professions.
2. That the full costs of professional liability insurance premiums be funded by MOHLTC as an incentive to maternity care providers of all professions to remain in practice.
3. That the Office of Maternal and Newborn Health explore new mechanisms for inter-professional liability coverage, alternative dispute resolution and public protection that eliminate the current competition that exists between insurers, including the Canadian Medical Protective Association (CMPA), the Healthcare Insurance Reciprocal of Canada (HIROC) and the Canadian Nurses Protective Society (CNPS) and others and reduce the length of time and expense spent on pursuing claims.
4. That Government of Ontario fund the costs of caring for Ontarians with birth-related injuries, reducing the motivation for parents to sue maternity care providers to obtain this support.
5. That the Office of Maternal and Newborn Health establish regional risk management officers (safety officers) with expertise in clinical maternity care who work with maternity care providers to improve communication and risk management strategies as part of LHIN planning.
6. OMCEP commends professional stakeholders, the CMPA and CNPS, on the publication of a joint statement on collaborative care between Nurse Practitioners and Physicians.[34] and recommends the development and publication of a similar joint statement regarding collaborative care between physicians and midwives and other allied professionals where appropriate.
7. That the Office of Maternal and Newborn Health be mandated to engage the CMPA, HIROC and the CNPS at the national and provincial levels to create mechanisms for non-adversarial risk management approaches. These approaches would include: mediation strategies, support for providers who are undergoing claims, streamlined civil and disciplinary processes and support for families whose children require ongoing special care.
8. OMCEP endorses and recommends the implementation of team-based approaches to inter-professional risk management activities for all maternity care providers, such as developed by the MORE^{OB} program.

Program Accountability and Provider and Institutional Funding

The Ontario Maternity Care Expert Panel recommends:

1. That the maternity care system be sustained and adequately funded in accordance with an incentive-based strategy for primary maternity care services to Ontarians where they live and quality secondary and tertiary services as close to home as possible.
2. That the proposed Office of Maternal and Newborn Health receive financial reports from all the ministries and divisions that offer maternity care programs including education, service programs, provider remuneration and institutional funding so that systems for monitoring, evaluation and population-based planning can be developed as soon as possible.
3. That funding approvals to programs whose activity combines maternity care and other types of service delivery (including Public Health, Hospitals etc) will report on maternity expenditures as a separate part of their budgets and financial reports. To this end, the Office of Maternal and Newborn Health should be involved in LHIN budget development and format for regional maternity care plans to ensure a consistent report for maternity care allocations and expenditures.
4. That, to acknowledge the demands on maternity care providers to be accessible and provide a range of complex, high and low risk care, provider remuneration levels should be reoriented to the acuity of services being provided.
5. That compensation negotiation proposals for maternity care professional groups be reviewed with the Office of Maternal and Newborn Health prior to approval to ensure that new compensation schemes encourage stability, sustainability and equity in the maternity care system. Where the Office determines the provider funding mechanisms pose barriers to collaborative, inter-professional or effective maternity care, it must be mandated to work in conjunction with other ministry programs to develop and implement alternate payment methods and incentives, where appropriate, and to create complementary remuneration processes.
6. That physicians of all specialist groups receive fair compensation from the Ontario Health Insurance Plan or an alternate payment mechanism for direct consultations and assessments requested under the scopes of Registered Midwives and Nurse Practitioners.
7. That, as part of the mandate of the Office of Maternal and Newborn Health, the ministry support consideration of inter-professional roles for nurses and the review and adjustment of collective agreements, if required.
8. That the MOHLTC direct the Office to work with physician, midwife, and nurse remuneration programs to review the effectiveness of current incentive programs for maternity care and make recommendations to improve them based on the best available information on professional retention strategies. Incentives that could be uniquely suited to maternity care include those which support respect and collaboration between professionals, inter-professional models and continuing education to maintain competence and/or to extend scopes in under-serviced communities.

9. That as part of the funding the Office of Maternal and Newborn Health, MOHLTC approve a funding envelope for the development of a comprehensive decision support system that will monitor, evaluate and provide the requisite regular reports on the specified indicators of the maternity care system.

10. That MOHLTC fund the Office to incorporate the expertise available through emerging e-health initiatives to develop and implement electronic health systems that improve women's access to maternity care and improve communication by health care providers.

11. That, to encourage the timely and thorough registration of all live and stillbirths; allow for accurate monitoring and analysis of maternity care outcomes data; and provide better access for disadvantaged populations to insured newborn health services; the Attorney General's office work with municipalities to eliminate the fee for birth registration.

12. That the Government of Canada provide an incentive as part of the child tax benefit for first trimester prenatal care.

Ontario Maternity Care Expert Panel
Appendix B
Bibliography

1. Oral Questions: Hospital Funding [Mrs. Elizabeth Witmer (Kitchener-Waterloo) to Hon. George Smitherman (Minister of Health and Long-Term Care)]. Legislative Assembly of Ontario: Official Report of Debates 38th Parliament, Session 2 2005 Dec 5;LO28A.

2. Barriers and enabling factors task groups report. Enhancing Interdisciplinary Collaboration in Primary Health Care Initiative. 2005 Feb.

3. The pervading controversies of VBAC. SOGC Express Report 2005:4.

4. Should midwives be promoting and providing home birth? RCM Midwives 2005 Jul;8(7):321.

5. The future of maternity and newborn care in Canada: principles and recommendations. The Future of Maternity Care in Canada; London, Ontario; 2000 Nov 24-25.

6. Obstetric manual: Final report of the obstetric working group of the national health insurance board of the Netherlands [abridged]. Available from: http://europe.obgyn.net/nederland

7. Ontario Women's Health Status Report. Prepared for The Ontario Women's Health Council, 2002 Feb. Available from: http://www.womenshealthcouncil.on.ca

8. Hospital Report 2001: Acute Care. Canadian Institute for Health Information. Available from: www.cihi.ca

9. Deliveries in Ontario 1992/1993-1999/2000 [internal OMA document], 2001.

10. Ministry of Health and Long-Term Care Schedule of Benefits, April 1, 2001.

11. Health Canada. Family-centred maternity and newborn care: national guidelines. Ottawa: Minister of Public Works and Government Services; 2000.

12. National Childbirth Trust website: www.nctpregnancyandbabycare.com

13. PPPESO Niday Perinatal Database. Annual database of the Perinatal Partnership Program of Eastern and Southeastern Ontario, 2001.

14. Giving birth in Canada: Providers of maternity and infant care. Canadian Institute for Health Information, 2004.

15. Laying the foundation for change: A progress report on Ontario's health human resources initiatives. Ontario; 2005 Dec.

16. Canada's health care providers: 2005 Chartbook. Canadian Institute for Health Information; 2005.

17. Supply and utilization of general practitioner and family physician services in Ontario. ICES Investigative Report. 2005 Aug.

18. Access to midwifery profession in Ontario. Backgrounder for Ontario Ministry of Training, Colleges, and Universities. 2005 Jul.

19. Alberta Perinatal Health Program. Website: http://www.aphp.ca

20. British Columbia Reproductive Care Program. Website: http://www.rcp.gov.bc.ca

21. Reproductive Care Program of Nova Scotia. Website: http://rcp.nshealth.ca

22. Ontario Ministry of Finance Projections, 2004.

23. Prince Edward Island Reproductive Health Programme. Available from: http://www.gov.pe.ca/infopei/onelisting.php3?number=20616

24. The South Vancouver Birth Programme: A new model of maternity care. Collaboration for Maternal and Newborn Health Conference: Maternity Care in the 21st Century. Vancouver; 2005 Feb.

25. Registered Nurses Database (RNDB). Canadian Institute for Health Information.

26. Ontario Midwifery Program, Ministry of Health and Long-Term Care.

27. Vital Statistics (CY 1996 to CY 2001), Registrar General of Ontario; Statistics Canada.

28. OHIP Claims for Medical Services (FY 2001 to FY 2003), Ontario Ministry of Health and Long Term Care.

29. Birth Tables (CY 2002 and CY 2003), Statistics Canada.

30. Claims Database Prototype (FY 1998 to FY 2003), Ontario Ministry of Health and Long Term Care.

31. Daily Census Summary (FY 2003), Financial and Information Management Branch, Ministry of Health and Long-Term Care.

32. Thunder Bay Collaborative Maternity Centre and Chronic Disease Management Centre, Primary Health Care Transition Fund, Health Canada. 2004

33. A report of Manitoba's working group on maternal/newborn services [in press]. 2005 May.

34. Regulated Health Professions Act, 1991, S.O. 1991, c. 18.

35. Independent Health Facilities Act, R.S.O 1990, c. 13.

36. Public Hospitals Act, R.S.O 1990, c. P.40.

37. Alberta Health and Wellness. Integration of midwifery services evaluation project: Final report. Edmonton, Alberta; 2005 Nov 29.

38. Allen DI, Kamradt JM. Relationship of infant mortality to the availability of obstetrical care. Indiana Journal of Family Practice 1991;33:609-13.

39. Allen VM, O'Connell CM, Farrell SA, Baskett TF. Economic implications of method of delivery. Am J Obstet Gynecol 2005;193:192-7.

40. American College of Nurse-Midwives. The certified nurse-midwife/midwife as first assistant at surgery. 1998 May. Available from: http://www.midwife.org

41. Anderson JW, Johnstone BM, Remley DT Breastfeeding and cognitive development: A meta-analysis. Am J Clin Nutr 1999;70(4):525-35.

42. Anderson M. Interview report. Discussion paper prepared for the Multidisciplinary Collaborative Primary Maternity Care Project. Ottawa; 2005 Mar.

43. Association of American Medical Colleges. More U.S. medical school seniors choose residencies in competitive and "lifestyle" specialties [press release]. Washington; 2006 Mar 16.

43. Association of Ontario Health Centres. Relative physician liability between provider-based and community-based family health teams [legal opinion]. 2005 Feb 3.

44. Association of Ontario Midwives. Midwifery practice group - hospital integration survey. 2004 May.

45. Atcheson K. Eighth annual report of the obstetrical review committee to the Chief Coroner of the province of Ontario. 2002 May.

46. Baird AG, Jewell D, Walker JJ. Management of labour in an isolated rural maternity hospital. BMJ 1996;312:223-6.

47. Benoit C, Carroll D, Kaufert P. Moving in the right direction? Regionalizing maternity care services in British Columbia, Canada. The National Network on Environments and Women's Health. NNEWH Working Paper Series #13 Mar 1, 2001.

48. Biringer A, Carroll J, Van Wagner V, Medves J. Babies can't wait project. Collaborative maternity care scenarios and models. 2005.

49. Biringer A, Tannenbaum D, Caplan J. Provision of maternity care by family medicine graduates of a tertiary care hospital. Hope for the future? Presented at NAPCRG, New Orleans; 2002 Nov 18.

50. Black DP, Fyfe IM. The safety of obstetric services in small communities in northern Ontario. CMAJ 1984;130:571-6.

51. Blott M. Medical workforce in obstetrics and gynaecology: "changing times". Chairman's review. Royal College of Obstetricians and Gynaecologists. 2002.

52. Borsellino M. CPSO softens and upgrades stance on home birth. Medical Post Newsletter 2001 Mar/Apr.

53. Boswell C, Cannon S. New horizons for collaborative partnerships. Online J Issues Nurs 2005;10(1):Available: www.nursingworld.org/ojin/topic26/tpc26_2.htm

54. British Columbia Medical Association. Doctors, province enhance maternity care [press release]. 2004 Oct 15.

55. Burns LR, Connolly T, DeGraaff RA. Impact of physicians' perceptions of malpractice and adaptive changes on intention to cease obstetrical practice. Journal of Rural Health 1999;15(2):134-46.

56. Campbell MK, Chance GW, Natale R, Dodman N, Halinda E, Turner L. Is perinatal care in southwestern Ontario regionalized? CMAJ 1991;144(3):305-12.

57. Canadian Federation of Medical Students. Decreased interest in family medicine: Position paper. 2005 Apr 30. Available from: http://www.cfms.org

58. Canadian Healthcare Association. 2005 CHA Abridged Guide to Canadian Health Care Facilities on CD. Vol. 13. Ottawa: The Association; 2005.

59. Canadian Healthcare Association. Guide to Canadian Healthcare Facilities, 2001-2002. Vol. 9. Ottawa: The Association; 2001.

60. Canadian Institute for Health Information. Giving birth in Canada: a regional profile. 2004.

61. Canadian Institute for Health Information. Giving birth in Canada: providers of maternity and infant care. 2004.

62. Canadian Institute for Health Information. Hospital Discharge Abstract Database (FY 1996 to FY 2003).

63. Canadian Institute for Health Information. Giving birth in Canada: the costs. 2006.

64. Canadian Medical Association. National physician survey - initial data release background document. 2004 Oct 27.

65. Canadian Medical Protection Association, Canadian Nurses Protective Society. Joint statement on liability protection for nurse practitioners and physicians working in collaborative practice. 2005 Mar.

66. Canadian Medical Protective Association. Fee Schedule for 2006. Available from: http://www.cmpa-acpm.ca

67. Canadian Medical Protective Association. Alternative patient compensation models in Canada. Available from: http://www.cmpa-acpm.ca

68. Chan BTB. The declining comprehensiveness of primary care. CMAJ 2002;166(4):429-34.

69. Chan BTB, Schultz SE. Supply and utilization of general practitioner and family physician services in Ontario. ICES investigative report. Toronto: Institute for Clinical Evaluative Sciences; 2005.

70. Child Health Network for the Greater Toronto Area. Guidelines for the clinical scope of maternal and newborn services. 2001 Mar.

71. Child Health Network for the Greater Toronto Area. Strengthening the maternal, infant and newborn system by design. Toronto; 2005 Mar.

72. Cohen JR. Patient satisfaction with the prenatal care provider and risk of cesarean delivery. Am J Obstet Gynecol 2005;192:2029-34.

73. College of Family Physicians of Canada, Society of Rural Physicians of Canada, Society of Obstetricians and Gynaecologists of Canada. Joint position paper: Training for rural family practitioners in advanced maternity skills and caesarean section. Available from: http://www.cfpc.ca

74. College of Midwives of Ontario. Registrants binder. December 2005. Available from: http://www.cmo.on.ca

75. College of Midwives of Ontario. When hospital policies differ from College standards. Available from: http://www.cmo.on.ca

76. College of Midwives of Ontario. Indications for mandatory discussion, consultation and transfer of care. 2000 Jun. Available from: http://www.cmo.on.ca

77. College of Midwives of Ontario. Regulation made under the midwifery act, 1991. Designated drugs. 1994 Jan, Revised 2004 Sep 26. Available from: http://www.cmo.on.ca

78. College of Midwives of Ontario. Continuity of care. 1994 Jun. Available from: http://www.cmo.on.ca

79. College of Midwives of Ontario. Exemption for Aboriginal midwives. 1994 Jun. Available from: http://www.cmo.on.ca

80. Committee on Reproductive Care. Trends in reproductive care: A medical perspective. Ontario Medical Association, 1995.

81. Crutcher RA, Banner SR, Szafran O, Watanabe M. Characteristics of international medical graduates who applied to the CaRMS 2002 match. CMAJ 2003;168(9):1119-23.

82. Cyr RM. Myth of the ideal cesarean section rate: commentary and historic perspective. Am J Obstet Gynecol 2006;194:932-6.

83. Davies B. The foundation of maternity care: the nurse. The Future of Maternity Care in Canada; London, Ontario; 2000 Nov 24-25.

84. de Costa CM, Robson S. Throwing out the baby with the spa water? MJA 2004;181(8):438-40.

85. De Vries R. A pleasing birth: midwives and maternity care in the Netherlands. Temple University Press; 2005.

86. Demography Division, Statistics Canada. Population by Local Health Integration Network (CY 1996 to CY 2003).

87. Dennis CL. Psychosocial and psychological interventions for prevention of postnatal depression: systematic review. BMJ 2005 Jul 2;331:15.

88. Department of Health. National service framework for children, young people and maternity services. Part III: Maternity services. United Kingdom; 2004 Oct 4.

89. Dietz WH. Breastfeeding may help prevent childhood obesity. JAMA 2001;285(19):2506-7.

90. Downe S, editor. Normal childbirth: evidence and debate. Philadelphia: Churchill Livinstone; 2004.

91. Dzakpasu S, Chalmers B for the Maternity Experiences Study Group of the Canadian Perinatal Surveillance System, Health Canada. Canadian maternity experiences survey pilot study. Birth 2005 Mar;32(1):34-8.

92. Eastern and Southeastern Ontario Regional Perinatal Services Project. Report. 2004 Jun 28.

93. Eberts M, Edney R, Kaufman K, Schwartz A. Task Force on the implementation of midwifery in Ontario. Ontario Ministry of Health; 1987.

94. Eidson-Ton WS, Nuovo J, Solis B, Ewing K, Diaz H, Smith LH. An enhanced obstetrics track for a family practice residency program: results from the first 6 years. J Am Board Fam Pract 2005;18(3):223-8.

95. Enkin M, Keirse MJNC, Neilson J, Crowther C, Duley L, Hodnett E, et al. A guide to effective care in pregnancy and childbirth. Third Ed., New York: Oxford University Press; 2000.

96. Epoo B, Nastapoka U, van Wagner V. Bringing birth back to the community: Midwifery in the Inuit villages of Nunavik. International Confederation of Midwives, 2005 Jul.

97. European Institute of Women's Health. Women's health in Europe: facts and figures across the European Union. Dublin, Ireland; 2006.

98. Expert Panel on Health Professional Human Resources. Shaping Ontario's physician workforce. A report to the Ministry of Health and Long-term Care. 2001 Jan.

99. Finnstrom O, Berg G, Norman A, Olausson PO. Size of delivery unit and neonatal outcome in Sweden. A catchment area analysis. Acta Obstetrica et Gynecologica 2006;85:63-67.

100. Godwin M, Hodgetts G, Sequin R, MacDonald S. The Ontario Family Medicine Residents Cohort Study: factors affecting residents' decisions to practice obstetrics. CMAJ 2002;166(2):179-84.

101. Goertzen J. Maternity care by family physicians: characteristics of successful and sustainable models [letter]. JOGC 2005;27(10):933.

102. Goluboff S, Reynolds L, Klein M, Handfield-Jones P. Privileging and consultation in maternity and newborn care. College of Family Physicians of Canada. Available from: www.cfpc.ca

103. Government of British Columbia. Midwives Regulation. Schedule 1 - Drugs and Substances. 1995 Mar, Revised 2005 Jul.

104. Government of Manitoba. Midwifery Regulation, Man. Reg. 68/2000 Schedule B Medications. Regulation made under the Midwifery Act C.C.S.M. c. M125. 1997 Jun 28, Updated 2002 Nov 15.

105. Government of the North West Territories. Midwifery Profession: Prescription and administration of drugs and other substances regulations. R-003-2005. 2005 Jan 29.

106. Grady D. Trying to avoid 2nd cesarean, many find choice isn't theirs. The New York Times. 2004 Nov 29. Available from: http://www.nytimes.com

107. Gray R. Labour pains prevent choice of home births. Scotland on Sunday. 2005 Feb 6.

108. Grzybowski SCW, Cadesky AS, Hogg WE. Rural obstetrics: a 5 year prospective study of the outcomes of all pregnancies in a remote northern community. CMAJ 1991 Apr 15;144(8):987-94.

109. Haaf W. Nurse shortage cracking maternity care foundation. The Medical Post 2000 Dec 19;36(42):Available from: www.medicalpost.com

110. Hartmann K, Viswanathan M, Palmieri R, Gartlehner G, Thorp J, Lohr KN,. Outcomes of routine episiotomy: a systematic review. JAMA 2005 May 5;203(17):2141-8.

111. Hawkins M, Knox S. The midwifery option: a Canadian guide to the birth experience. Toronto: Harper Collins; 2003.

112. Health Canada. Family-centred maternity and newborn care: National guidelines. Ottawa: Minister of Public Works and Government Services; 2000.

113. Health Council of Canada. Health care renewal in Canada: Clearing the road to quality. 2006 Feb.

114. Health Council of Canada. Modernizing the management of health human resources in Canada: Identifying areas for accelerated change. Report from a national summit. 2005 Jun 23.

115. Health Council of Canada. Health care renewal in Canada: accelerating change. 2005 Jan.

116. Health Services Restructuring Commission. Proposed inter-professional primary health care costing models. 1999 Nov.

117. Heaphy PE, Bernard SL. Maternal complications of normal deliveries: variation among rural hospitals. Journal of Rural Health 2000 Spring;16(2):139-47.

118. Helewa M. Maternity care: crisis within and without [editorial]. JOGC 2005 Sep;27(9):845-6.

119. Heller G, Richardson DK, Schnell R, Misselwitz B, Kunzel W, Schmidt S. Are we regionalized enough? Early-neonatal deaths in low-risk births by the size of delivery units in Hesse, Germany 1990-1999. International Journal of Epidemiology 2002;31:1061-68.

120. Helton M, Skinner B, Denniston C. A maternal and child health curriculum for family practice residents: results of an intervention at the University of North Carolina. Fam Med 2003;35(3):174-80.

121. Hirst C. Re-birthing: report of the review of maternity services in Queensland. 2005 Mar.

122. Hodnett ED, Downe S, Edwards N, Walsh D. Home-like versus conventional institutional settings for birth. Birth 2005 Jun;32(2):151.

123. Hodnett ED, Gates S, Hofmeyr GJ, Sakala C. Continuous support for women during childbirth. The Cochrane Database of Systematic Reviews; 2003 Issue 3.

124. Hodnett ED, Lowe NK, Hannah ME, Willan AR, Stevens B, Weston JA et al. Effectiveness of nurses as providers of birth labor support in North American hospitals. JAMA 2002;288(11):1373-81.

125. Houd S. The outcome of perinatal care in Inukjuak, Nunavik, Canada 1998-2002. Birth International [electronic journal]. Available from: http://www.acegraphics.com.au/index.html

126. Hueston WJ. Family physicians' satisfaction with practice. Archives of Family Medicine 1998;7(3):242-7.

127. Hundley VA, Milne JM, Glazener CMA, Mollison J. Satisfaction and the three C's: continuity, choice and control. Women's views from a randomized controlled trial of midwife-led care. Br J of Obs and Gyn 1997;104:1273-80.

128. Preferences of Canadian physicians for blended payment arrangements: results from the Canadian Medical Associations physician resource questionnaire, 2001-2003. Canadian Association for Health Services and Policy Research Conference. 2004 May 25-28.

129. Hutten-Czapski PA. Decline of obstetrical services in northern Ontario. Can J Rural Med 1999;4(2):72-6.

130. Hutten-Czapski PA. Family practice maternity care. Can Fam Physician 1998 Apr;44:707-8, 716-8.

131. Iglesias S, Bott N, Ellehoj E, Yee J, Jennissen B, Bunnah T, Schopflocher D. Outcomes of maternity care services in Alberta, 1999 and 2000: a population-based analysis. JOGC 2005 Sep;27(9):855-63.

132. Iglesias S, Grzybowski SCW, Klein MC, Gagne GP, Lalonde A. et al. Rural obstetrics: Joint position paper on rural maternity care. Can J Rural Med 1998;3(2):75-80.

133. Integration of Midwifery Services Evaluation Project. Final report: key findings and recommendations [excerpt]. November 29, 2004.

134. Jackson DJ, Lang JM, Swartz WH, Ganiats TG, Fullerton J, Ecker J, Nguyen U. Outcomes, safety, and resource utilization in a collaborative care birth center program compared with traditional physician-based perinatal care. Am J Public Health 2003 Jun;93(6):999-1006.

135. Johanson R, Newburn M, Macfarlane A. Has the medicalisation of childbirth gone too far? BMJ 2002;324:892-95.

136. Johnson KC, Daviss BA. Outcomes of planned homebirths with certified professional midwives: large prospective study in North America. BMJ 2005;330:1416.

137. Kaczorowski J, Levitt C. Intrapartum care by general practitioners and family physicians. Can Fam Physician 2000;46:587-96.

138. Kasperski JM. Babies can't wait: primary care in obstetrics crisis. A solution focused PHCTF research project. 2004 Dec 9.

139. Klein MC, Johnston S, Christilaw J, Carty E. Mothers, babies and communities: centralizing maternity care exposes them to complications and endangers community sustainability [editorial]. Can Fam Physician 2002 Jul;48:1177-9.

140. Klein MC, Kelly A, Spence A, Kaczorowski J, Gryzbowski S. In for the long haul: which family physicians plan to continue delivering babies? Can Fam Physician 2002;48:1216-22.

141. Kornelsen J, Grzybowski S. Is local maternity care an optional service in rural communities? JOGC 2005;27(4):327-9.

142. Kornelson J, Dahinten S, Carty E. On the road to collaboration: nurses and newly regulated midwives in British Columbia, Canada. Journal of Midwifery and Women's Health 2003;48(2):126-32.

143. Kornelson J, Grzybowski S. Safety and community: the maternity care needs of rural parturient women. JOGC 2005 Jun:247-54.

144. Kornelson J, Grzybowski S. 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.

145. Kornelson J. Solving the maternity care crisis: making way for midwifery's contribution. British Columbia Centre of Excellence for Women's Health, 2003 Jun.

146. Lalonde AB. Access to maternity care [editorial]. JOGC 2005 May;27(5):445-6.

147. Lane K. Still suffering from the 'silo effect': lingering cultural barriers to collaborative care. Canadian Journal of Midwifery Research and Practice 2005 Spring;4(1):8-16.

148. Lankshear S, Rush J. Acute care nursing plan report. A report for the Ministry of Health and Long-Term Care, 2005.

149. Lanz PM, Low LK, Varkey S, Watson RL. Doulas as childbirth paraprofessionals: results from a national survey. Women's Health Issues 2005;15:109-16.

150. Laws PJ, Sullivan EA. Australia's mothers and babies 2003. Sydney: AIHW National Perinatal Statistics Unit; 2005 Dec; Perinatal Statistics Series Number 16.

151. Leeman L, Leeman R. Do all hospitals need cesarean delivery capability? an outcomes study of maternity care in a rural hospital without on-site cesarean capability. Journal of Family Practice 2002 Feb;51(2):129-34.

152. Birth centres: The Quebec experience. Collaboration for Maternal and Newborn Health Conference. Vancouver; 2006 May 5.

153. Levitt C. Training for family practice obstetrics [editorial]. 2002 Jul;48:1175-6.

154. Little M, Shah R, Vermeulen MJ, Gorman A, Dzendoletas D, Ray JG. Adverse perinatal outcomes associated with homelessness and substance use in pregnancy. CMAJ 2005 Sept 13;173(6):615-8.

155. Lofsky S. Obstetric human resources in Ontario 1996-97: changing realities, changing resources. Ontario Medical Review 1998 Nov;65(10):24-31.

156. Lofsky S, Adamson M. Changing trends in obstetrical physician resources in Ontario 1992-2003. Report to "Babies Can't Wait". 2005 Mar.

157. Low JA. The current crisis in obstetrics. J Obstet Gynaecol Can 2005;27(11):1031-7.

158. MacDonald M, Schreiber R, Davis L. Exploring new roles for advanced nursing practice. Prepared for The Canadian Nurses Association, June 2005. 2004 Oct.

159. MacLennan A, Nelson KB, Hankins G, Speer M. Who will deliver our grandchildren? Implications of Cerebral Palsy litigation [commentary]. JAMA 2005;294(13):1688-90.

160. Martin B. Nova Scotia Department of Health primary maternity care working group [slide presentation]. 2005 May 5.

161. Maternity Care Enhancement Project. Supporting local collaborative models for sustainable maternity care in British Columbia. Ministry of Health Services: British Columbia; 2004 Dec.

162. McIlwain R, Smith S. Obstetrics in a small isolated community: the cesarean section dilemma. Can J Rural Med 2000;5(4):221-3.

163. McKendry R. Physicians for Ontario: too many? too few? for 2000 and beyond. A Report for the Ministry of Health and Long-Term Care. Ontario; 1999 Dec.

164. McNamee M. Are liability issues a barrier to collaborative care? SOGC News 2005 Winter:15.

165. McNiven P, Kaufman K, Enkin M. Measuring birth outcomes: validating the perinatal outcome index. Canadian Journal of Midwifery Research and Practice 2002 Winter;1(2):9-14.

166. Medves J, Davies B, Heino A. Report of a survey of rural maternity nurses practicing in Ontario [in review].

167. Medves JM, Davies BL. Sustaining rural maternity care--don't forget the RNs. Canadian Journal of Rural Medicine 2005;10(1):29-35.

168. Menticoglou SM, Hall PF. The push against vaginal birth. BJOG 2002;109:485-91.

169. Milne JK. Patient safety—no excuses. SOGC Newsletter 2005 Summer:3.

170. Milne JK. Human resources crisis in obstetrics and gynaecology [editorial]. SOGC News 2001 Oct:1.

171. Ministry of Health and Long-Term Care. Report on the integration of primary health care nurse practitioners into the Province of Ontario. Ontario; 2005 Jan.

172. Ministry of Health. Family health teams: guidelines for funding. Available from: http://www.health.gov.on.ca

173. Ministry of Health and Long-Term Care. Family health teams: Guide to interdisciplinary team roles and responsibilities. Ontario; 2005 Jul 4. Available from: http://www.health.gov.on.ca

174. Ministry of Health and Long-term Care. Family Health Teams [public information]. Available from: http://www.health.gov.on.ca

175. Ministry of Health and Long-term Care. McGuinty government launches new health human resources strategy [news release]. 2006 May 3. Available from: http://www.health.gov.on.ca

176. Ministry of Health and Long-term Care. Family health team: Guide to interdisciplinary provider compensation. 2006 Feb 28. Available from: http://www.health.gov.on.ca

177. Ministry of Training, Colleges and Universities. McGuinty government to open new campus for medical training in Mississauga [release]. 2006 Feb 9.

178. Moon M, Breitkreuz L, Ellis C, Hanson C. Midwifery care: what women want. Manitoba Action Committee on the Status of Women 1999 Jun 16.

179. Moster D, Lie RT, Markestad T. Neonatal mortality rates in communities with small maternity units compared with those having larger maternity units. Br J Obstet Gynaecol 2001 Sep;108:904-9.

180. Multidisciplinary Collaborative Primary Maternity Care Project. Background research: Final report. 2004 Dec 17.

181. Multidisciplinary Collaborative Primary Maternity Care Project. Health care providers and other stakeholders survey report. 2004 Dec 14.

182. Multidisciplinary Collaborative Primary Maternity Care Project. Guidelines for development of a multidisciplinary collaborative primary maternity care model. Ottawa; 2006 Apr.

183. Multidisciplinary Collaborative Primary Maternity Care Project. Accountability, liability and malpractice. Available from: http://www.mcp2.ca

184. Multidisciplinary Collaborative Primary Maternity Care Project. Definition of multidisciplinary collaborative maternity care for MCP^2. Available from: http://www.mcp2.ca

185. Mustard JF, McCain MN, Bertrand J. Changing beliefs to change policy: the early years study. ISUMA 2000 Autumn;1(2):76-9.

186. National Aboriginal Health Organization. Midwifery and Aboriginal midwifery in Canada. 2004 May 28.

187. Nesbitt TS. Rural maternity care: new models of access. Birth 1996 Sept;23(3):161-5.

188. Nesbitt TS, Connell FA, Hart LG, Rosenblatt RA. Access to obstetric care in rural areas: effects on birth outcomes. Am J Pub Health 1990;80(7):814-8.

189. Nesbitt TS, Davidson RC, Paliescheskey MR, Fox-Garcia J, Arevalo JA. Trends in maternity care by graduates and the effect of an intervention. Fam Med 1994;26(3):149-53.

190. Nesbitt TS, Larson EH, Rosenblatt RA, Hart LG. Access to maternity care in rural Washington: its effect on neonatal outcomes and resource use. Am J Public Health 1997;87(1):85-90.

191. Nolte J, Tremblay M. Enhancing interdisciplinary collaboration in primary health care in Canada. 2005 Apr.

192. Nova Scotia Department of Health. Report of the Primary Maternity Care Working Group. Halifax; 2005 Jun.

193. Oandasan I, D'Amour D, Zwarenstein M, Barker K, Purden M. et al. Interdisciplinary education for collaborative, patient-centred practice: research and findings report. Ottawa: Health Canada; 2004.

194. O'Connor N. South Van birth support group looking for more new moms. The Vancouver Courier. 2004 Aug 5.

195. Office of the Auditor General of Ontario. Special report: Accountability and value for money, 2000. Available at: http://www.auditor.on.ca

196. Olsen O, Jewel MD. Home versus hospital birth [Cochrane review]. The Cochrane Library, Issue 1 2006.

197. Ontario College of Family Physicians. Babies Can't Wait. Proposal to the Primary Health Care Transition Fund, Health Canada. 2005.

198. Ontario Hospital Association. The intergration of midwifery services into hospitals. 1994. Available from: http://www.oha.com

199. Ontario Medical Association Human Resources Committee. Position paper on physician workforce planning. 2002 Apr 4.

200. Ontario Medical Association, Association of Ontario Midwives. A joint statement of professional relations between obstetricians and registered midwives in Ontario. 2005 Feb.

201. Ontario Medical Association, Association of Ontario Midwives. Guidelines for maternal/neonate transfer from home to hospital. 2005 Feb.

202. Ontario Medical Association, Committee on Reproductive Care. Trends in reproductive care: A medical perspective. 1995.

203. Ontario Medical Association, Subcommittee on Hospital Privileges. Section on general and family practice: Future patterns of obstetrics in Ontario [internal document], 1985.

204. Ontario Ministry of Health. Ontario women get greater choice in childbirth [news release]. 1994 Mar 4.

205. Ontario Ministry of Health and Long Term Care. Local health integration networks (LHINs): complete findings from the LHIN community workshops. 2005 Jan 11.

206. Ontario Physician Human Resources Data Centre. Physicians in Ontario 2002: reports from the active physician registry. 2003.

207. OReilly M. Medical recruitment in rural Canada: Marathon breaks the cycle. CMAJ 1997 Jun;156:1593.

208. Orrantia E, Poole H, Strike J, Zelek B. Evaluation of a novel rural obstetrical care model. Presentation to Canadian College of Family Physicians, Family Medicine Forum, 2004 Nov.

209. Peddle LJ, Brown J, Buckley J, Dixon W, Kaye J, Muise M et al. Voluntary regionalization and associated trends in perinatal care: the Nova Scotia reproductive care program. Am J Obstet Gynecol 1983;145(20):170-6.

210. Pellizzari R, Medves J. Ontario's maternity crisis: a time for action. Ontario Women's Health Council, 2002 Nov.

211. Perinatal Partnership Program of Eastern and Southeastern Ontario. Perinatal services in Ontario: how are we doing? 2005 Mar.

212. Perry TR. The certified registered nurse anesthetist: occupational responsibilities, perceived stressors, coping strategies, and work relationships. AANA Journal 2005 Oct;73(5):351-6.

213. Peterson TC, Reiss PJ, Wadland WC. Restructuring a family practice obstetrics curriculum. J Fam Pract 1990;22:219-25.

214. Picard A. Study confirms home-birth safety, researchers say. The Globe and Mail, online edition. 2006 Apr 4. Available from: http://www.theglobeandmail.com

215. Polaschek NR. Cultural safety: a new concept in nursing people of different ethnicities. Journal of Advanced Nursing 1998;27:452-7.

216. Pope R, Graham L, Patel S. Woman-centred care. International Journal of Nursing Studies 2001 Apr;38(2):227-38.

217. Price D, Howard M, Shaw E, Zazulak J, Waters H, Chan D. Family medicine obstetrics: collaborative interdisciplinary program for a declining resource. Can Fam Physician 2005 Jan;51:68-74.

218. Price DJ, Lane C, Klein MC. Maternity care by family physicians: characteristics of successful and sustainable models. JOGC 2005 May;27(5):460-66.

219. Professional Association of Interns and Residents of Ontario. Primary importance: new physicians and the future of family medicine. Position paper on the sustainability of family medicine. 2004 Jun.

220. Public Health Agency of Canada. Make every mother and child count: report on maternal and child health in Canada. 2005 Apr 7.

221. Public Health Agency of Canada. Canadian Perinatal Surveillance System. Available at: http://www.phac-aspc.gc.ca/rhs-ssg/index.html

222. Rachlis V. "Inside out": letter from the president of the Ontario College of Family Physicians. 2005 Jul 18;#17.

223. Ratcliffe SD, Newman SR, Stone MB, Sakornbut E, Wolkomir M, Thiese SM. Obstetric care in family practice residencies: a 5-year follow-up survey. JABFP 2002 Jan/Feb;15(1):20-4.

224. Regional Perinatal Services Project Coordinating Committee. At risk: perinatal services in southwestern Ontario. Issue summary and recommendations for action.

225. Registered Nurses Association of Ontario. Seventy percent (70%) full time RN employment. Available from: http://www.rnao.org

226. Reid AJ, Grava-Gubins I, Carroll JC. Family physicians in maternity care. Still in the game? Report from the CFPC's Janus project. Can Fam Physician 2000;46:601-11.

227. Reid T, Grava-Gubins I, Carroll JC. Maternity care report: family physicians meeting the needs of tomorrow's society. Can Fam Physician 2002;48:1225-6.

228. Resnik R. Can a 29% cesarean delivery rate possibly be justified? [editorial]. Obstet Gynecol 2006 Apr;107(4):752-4.

229. Reynolds L. What do we need in order to rebuild Canadian maternity care. The Accoucher 2000 Sep;7(3):1-2.

230. Reynolds L, Klein MC, editors. Recommendations for a sustainable model of maternity and newborn care in Canada. Proceedings of the Future of Maternity Care in Canada: Crisis and Opportunity; 2000 November; London, Ontario, 2001.

231. Rising SS. Centering pregnancy: an interdisciplinary model of empowerment. Journal of Nurse-Midwifery 1998 Jan/Feb;43(1):46-54.

232. Roberts RG, Bobula JA, Wolkomir MS. Why family physicians deliver babies. J Fam Pract 1998 Jan;46(1):31-3.

233. Rogers J. Sustainability and collaboration in maternity care in Canada: dreams and obstacles. Can J Rural Med 2003;8(3):193-8.

234. Rogers J. Integrated maternity care for rural and remote communities. A proposal to the Primary Health Care Transition Fund, Health Canada. 2004

235. Rogers J. Midwife projections. Midwifery Education Program; 2005 Oct.

236. Rogers J. Integrated models in maternity care: A potential solution of Canada's rural and remote communities. Paper presented at 3rd National Conference of Canadian Rural Health Research Society. Halifax, Nova Scotia; 2002 Oct 24-26.

237. Rooks JP, Weatherby NL, Ernst EKM, Stapleton S, Rosen D, Rosenfield A. Outcomes of care in birth centers. The National Birth Center Study. New Engl J Med 1989;321:1804-11.

238. Rosenblatt RA, Reinken, J, Shoemack P. Is obstetrics safe in small hospitals? Evidence for New Zealands regionalised perinatal system. Lancet 1985;2:429-32.

239. Rourke J. Trends in small hospital obstetric services in Ontario. Can Fam Physician 1998;44:2117-24.

240. Royal College of Midwives. Homebirth handbook volume 1: promoting homebirth. RCM Trust, 2002.

241. Shah CP, Moloughney BW. A strategic review of the Community Health Centre Program. Ministry of Health and Long-Term Care; 2001 May.

242. Smith LFP, Reynolds JL. Factors associated with the decision of family physicians to provide intrapartum care. CMAJ 1995;152(11):1789-97.

243. Snelling S, Ehrlich A, Grafton D, Michel I, MacLean L, McFarland V. Evaluation of the prenatal and postnatal nurse practitioner services initiative: interim report. 2005 Mar.

244. Society of Obstetricians and Gynaecologists. Impact of inadequate prenatal care on neonatal mortality will rise in Canada [media advisory]. Quebec; 2005 Jun 20. Available from: http://www.sogc.org

245. Society of Obstetricians and Gynaecologists of Canada. Midwifery. SOGC Policy Statement No. 126, 2003 Mar.

246. Society of Obstetricians and Gynaecologists of Canada. A guide for health professionals working with Aboriginal peoples. SOGC Policy Statement No. 100; 2000 Dec.

247. Society of Obstetricians and Gynaecologists of Canada. Caesarian section on demand - SOGC's position [media advisory]. 2004. Available from: http://www.sogc.org

248. Society of Obstetricians and Gynaecologists. The prevention of early-onset neonatal group B streptococcal disease. Clinical Practice Guideline No. 149, 2004 Sep.

249. Society of Obstetricians and Gynaecologists of Canada. Multidiscpilinary collaborative primary maternity care. A proposal to the Primary Health Care Transition Fund, 2004 Feb.

250. Society of Obstetricians and Gynaecologists of Canada, The College of Family Physicians of Canada, The Society of Rural Physicians of Canada. Number of births to maintain competence. 2002 Apr;113.

251. Stanimir G. Shared obstetrical care: A case study. Presented at the Ontario Hospital Association Interdisciplinary Care Conference; 2004 Dec.

252. Starfield B. Primary care visits and health policy. CMAJ 1998;159:795-6.

253. Statistics Canada. Births, 2003. The Daily; 2005 Jul 12. Available from: http://www.statcan.ca

254. Statistics Canada. Study: disparities in birth outcomes by neighbourhood income in British Columbia: 1985-2000. The Daily; 2004 Nov 16.

255. Stewart M, McCandlish R, Henderson J, Brocklehurst P. Review of evidence about clinical, psychosocial and economic outcomes for women with straightforward

pregnancies who plan to give birth in a midwife-led birth centre, and outcomes for their babies. 2004 Dec.

256. Northern Ontario school of medicine: education for interdisciplinary care [slide presentation]. Presented at the Ontario Hospital Association Interdisciplinary Care Conference; 2004 Dec.

257. Sutherns R. Adding women's voices to the call for sustainable rural maternity care. Can J of Rural Med 2004;9(4):239-44.

258. Sutherns R. Women's experiences of maternity care in rural Ontario: do doctors matter? [Executive summary]. Feb 2002.

259. Taylor HA, Hansen GH. Perceived characteristics of successful family practice residency maternity care training programs. Fam Med 1997;29(10):7098-7114.

260. Thacker SB, Stroup D, Chang M. Continuous electronic heart monitoring for fetal assessment during labour [review]. The Cochrane Database of Systematic Reviews 2001, Issue 2.

261. The Canadian Medical Association and The Canadian Medical Protection Association. Tort Reform 2000: structures and subrogation. Available from: http://www.cmpa-acpm.ca

262. The Canadian Medical Protective Association. Medical liability practices in Canada: towards the right balance. August 2005. Available from: http://www.cmpa-acpm.ca

263. The Maternity Centre of Hamilton. Annual Report: December 2001 - December 2002.

264. The Maternity Centre of Hamilton. Collaborative model of family physician maternity care [slide presentation].

265. The national student and faculty survey of Canadian schools of nursing 2003-2004. Report 3: Diploma and degree programs reported: admissions, enrolment and graduates by type of nursing program, 1999 to 2003.

266. The Royal Australian and New Zealand College of Obstetricians and Gynaecologists. GP obstetrics: is it an endangered profession? O&G 2004 Mar;6(1).

267. The Scottish Executive. A framework for maternity care services in Scotland. 2001 Feb. Available from: http://www.scotland.gov.uk/library3/health/ffms-00.asp

268. Torr E, editor, for the British Columbia Reproductive Care Program. Report on the findings of the Consensus Conference on Obstetrical Services in Rural or Remote Communities, Vancouver, BC, 2000 Feb. 24-26. Can J Rural Med 2000;5(4):211-17.

269. Tracy SK, Sullivan E, Dahlen H, Black D, Wang YA, Tracy MB. Does size matter? a population-based study of birth in lower volume maternity hospitals for low risk women. BJOG 2006 Jan;113(1):86-96.

270. Tucker JS, Hall MH, Howie PW, Reid ME, Barbour RS, Florey CduV, McIlwaine GM. Should obstetricians see women with normal pregnancies? A multicentre randomised controlled trial of routine antenatal care by general practitioners and midwives compared with shared care led by obstetricians. BMJ 1996 Mar 2;312:554-9.

271. Van Wagner V. Expanded roles/scope of practice (class) for midwives: A proposed framework for considering the role of midwives in supporting local maternity care. Submission to Ontario Maternity Care Expert Panel; 2005 Jun.

272. Walsh D, Downe S. Outcomes of free-standing, midwife-led birth centres: a structured review. Birth 2004 Sept.;31(3):222-9.

273. Wang EEL. Breastfeeding. Canadian guide to clinical preventive health Care. Ottawa; Health Canada, 1994; 84-98.

274. Wen SW, Liu S, Marcoux S, Fowler D. Trends and variations in length of hospital stay for childbirth in Canada. CMAJ 1998;158(7):875-80.

275. Westview Community Health Centre. Shared care maternity program description. Edmonton, Alberta.

276. Wiegers TA. General practitioners and their role in maternity care. Health Policy 2003;66(1):51-9.

277. FHNs, FHGs and FHTs [slide presentation]. Presented at the Ontario Hospital Association Interdisciplinary Care Conference; 2004 Dec.

278. Woodward C A, Rosser W. Effect of medicolegal liability on patterns of general and family practice in Canada. CMAJ 1989;141:291-9.

279. Woolard LA, Hays RB. Rural obstetrics in New South Wales. Aust NZ J Obstet Gynaecol 1993;33(3):240-2.

280. World Health Organization. Appropriate technology for birth. Lancet 1985 Aug 24;2(8452):436-7.

281. World Health Organization. Safe motherhood: care in normal labour: a practical guide. Geneva: WHO Division of Reproductive Health, 1997.

282. World Health Organization (2000). Munich declaration: nurses and midwives: a force for health, 2000.

283. Wright B, Scott I, Woloschuk W, Brenneis F. Career choice of new medical students at three Canadian universities: family medicine versus specialty medicine. CMAJ 2004;170:1920-24.

284. Yang H, Byrick R, Donen N. Analysis of anaesthesia physician resources: projected Ontario deficit in 2005. Canadian Journal of Anaesthesia 2000;47:179-84.

285. Young D. The push against vaginal birth. Birth 2003;30(3):149-52.

286. Yu VHU, Dunn PM. Development of regionalized perinatal care. Seminars in Neonatology 2004 Apr;9(2):89-97.

287. Legal issues in interdisciplinary care [slide presentation]. Presented at the Ontario Hospital Association Interdisciplinary Care Conference; 2004 Dec.

Established Maternity Care Models –
Legend: Acute Care Nurse Practitioners (ACNP), FPs (FP), RMs (RM), Nurses (RN), Primary Health Care Nurse Practitioners [RN(EC)], OBs (OB), Paeds (Paeds)

Model Name/ Intrapartum Care Provider	Model Description	Clinical Care	Providers in Model	Opportunities for Sharing call or collaboration	Community, Population and Institutional Issues
FP Group or Solo Practice	FPs work as part of a group practice or as solo practitioner Provide services across the continuum of maternity care and 24/7 coverage. Intrapartum care in hospital (Level I, II or III) FP scope low-risk may include induction, augmentation, vacuum. Includes care for newborn. Consultation or transfer of care to specialist if needed Volume of practice varies widely from < 10 births per year to >100[1] average is 16-22 births per year[1]per FP	Prenatal care by FP either by primary provider or shared with a group of FPs.- in some models RNs may also be part of prenatal care provision Prenatal education may be offered by hospital or public health. Primary intrapartum care provider: FP or another team member on-call. In some groups one or more FPs specialize in intrapartum care most of the call for the group –variations on a "labourist" model.[1] Nursing care by staff RNs during intrapartum Postnatal and newborn care by FP or group with nursing care during postpartum stay	FPs Nurses . (RN) OBs and other consultants if referral needed	Variety of systems of call –soft or hard call[i] Amount of on-call depends on size of group and call system Variable levels of collaboration within group. May or may not share philosophy of care policy and protocols or share team meetings Other services arranged by referral to other providers. Woman may have to visit multiple providers at multiple sites. *Could be adapted to a multi or inter-professional model*	Team FP most common model. Can be used in any community large enough to sustain group practice of FPs. All births occur in hospital. Solo FP can work within any community setting. High-risk of provider burn-out, particularly with no shared on-call. Problems with long-term sustainability. Scaleable – high or low volume/urban or rural but community must be able to support team Fills a need for maternity services close to home for small communities. Supports model of birth as a normal physiological process when FPs provide care for uncomplicated pregnancies. Continuity of care within the team/group practice. Variable continuity of carer. Fee for service remuneration norm with some Alternate Payment Plans and salary systems for MDs. Salary for RNs.

[i] "Soft" and "hard" call systems are described in the Models Chapter of the Ontario Maternity Care Expert Panel Report

Established Maternity Care Models

Model Name/ Primary Intrapartum Care Provider	Model Description	Clinical Care	Providers in Model	Opportunities for Sharing call or collaboration	Community, Population and Institutional Issues
Obstetrician Group or Solo Practice	OBs work solo or are part of a group practice Provide services across the continuum of maternity care and 24/7 coverage. Intrapartum in hospital (Level I, II or III) OB scope includes high-risk intrapartum care based on level of hospital Newborn care not part of scope Volume of practice average 220[1] per year – range is from <10 to >500 births per year per OB Currently > 60% of births in the province cared for within this model	Prenatal care by OB either by primary provider or shared with a group. In some models RNs may also be part of prenatal care provision Prenatal education may be offered by hospital or public health. Primary intrapartum care provider: OB or another team member on-call. RNs provide care during intrapartum Postpartum maternal care by OB or group and nursing care during postpartum maternal-newborn hospital stay Primary newborn care by Paeds and/or FP, and nursing staff OBs provide consultation for FPs and RMs providing primary maternity care Transfer to tertiary care or sub-specialist may be required	OBs RNs Paeds or FP Other consultants if referral needed	Variety of systems of call –soft or hard call Amount of on-call depending on size of group and call system. Variable levels of collaboration within group and with other providers May or may not share philosophy of care policy and protocols Other services arranged by referral to other providers.- Woman may have to visit multiple providers at multiple sites. *Could be adapted to a multi or inter-professional model*	Group OB is current model in urban centres – more challenging in smaller centres since minimum number of births are required to sustain call-group. Risk of provider burn-out and problems with long-term sustainability in small groups. Teams work in medium and large communities, medium and high volume settings, any community that can attract enough OBs for a group practice. Supports OMCEP principles re access to care for those women who require specialist care; provides consultation to other care providers – ideally accessible through regional referral network Usually continuity of care for prenatal but not intrapartum. Fee for service remuneration norm with some Alternate Payment Plans and salary systemsfor MDs. Salary for RNs

Established Maternity Care Models

Model Name/ Primary Intrapartum Care Provider	Model Description	Clinical Care	Providers in Model	Opportunities for Sharing Call or collaboration	Community, Population and Institutional Issues
Midwives (RM) Group Practice	One RM as care coordinator. Small team of RMs (2-4) share care for each woman within practice groups, which range from 2-12 RMs. Provide services across the continuum of maternity care and 24/7 coverage. Intrapartum care in hospital (Level I, II or III) at home births or in birth centre RM scope low-risk. Can provide primary care after consultation for induction, augmentation. Newborn care in scope Care transferred to specialist if needed. Supportive care and care within scope after transfer Volume of practice for a full time RM is 40 courses of care as first RM and 40 as second RM at birth (60-80 births per year)[3]	Prenatal care by one or two RMs who plan to attend birth –some practices may share care with small team Prenatal education and health promotion an integral part of model of care Primary intrapartum care provider: RM or another team member on-call. -births normally attended by two RMs -intrapartum care in hospital, home or birth centre Postnatal and newborn care by RM or group. Early discharge from hospital with postpartum care by RMs is common. -in hospital postpartum nursing care for mothers and babies by staff RNs with visits by RM. Postpartum home visits and breastfeeding support an integral part of care	RMs RNs (if postpartum stay or as second attendant at birth) RMs in Ontario include registered midwives, RMs, and aboriginal midwives [4] OBs and other consultants if referral needed	Variety of systems of sharing care and call - model based on "knowing your midwife"/maximizing continuity of care –size of call group limited by CMO[5] Group practices provide support and on-call coverage. Group practices range in size from 2-12. Collaboration within group of RMs: required to share philosophy of care, policies and protocols. Amount of off-call depending on size of group and call system. Other services arranged by referral to other providers -woman may have to visit multiple providers at multiple sites. *Could be adapted to a multi or inter-professional model*	Urban and rural hospital, home births High or low volume settings May rarely be single RM in small community with RNs as second attendants, family doctors or OBs providing coverage during time off. The CMO Model of Care standard and the MOHLTC (funder) requires RMs to work in groups whenever possible. Low-risk care. Provides continuity of carer and care. Supports the OMCEP principles for birth close to home, as a normal physiological process Suitable for all women but responsive to disadvantaged/ marginalized women who benefit from personalized care Remuneration through a course of care payment system through Community Health Branch of MOHLTC

Established Maternity Care Models

Model Name/ Primary Intrapartum Care Providers	Model Description	Clinical Care	Providers in Model	Opportunities for Shared Call or Collaboration	Community, Population and Institutional Issues
FPs (FP) Rural/Remote model with anaesthesia and surgical capacity	Care model for small community involving shared care between a group of FPs in a Level 1 hospital – linked with FPs and RNs in more remote communities Provide services across the continuum of maternity care and 24/7 coverage. Intrapartum care in Level I hospital Low and medium risk – FPs team includes those with skills to perform c-section; or provide anaesthesia If necessary transfer in labour to OB at a Level II or III hospital Communities served may be spread out and road access limited – transfer may be by air. Volume of practice can range from 20 -200 + births per year	Prenatal care by FP- if FP does not do intrapartum care, woman transferred to one who does at 28-32 weeks. In remote areas most prenatal by RNs and/or nurse practitioners (RN(EC)) in nursing stations with FP or OB consultation, as required. At 34 weeks, decision made whether woman can give birth in community or if high-risk transfer to Level II or III hospital Women have variable access to prenatal health education and promotion through community and public health programs. Primary intrapartum care provider: FP or another team member on-call RNs provide care during intrapartum Postpartum and newborn care in hospital by attending MD and nursing staff for women from town or remote location Postpartum and newborn care for women near town within a week by attending MD or their FP. For women returning to outlying communities, limited postpartum care by RN or NP in community.	FPs FPs with advanced skills in pain management and complicated L+D help maintain childbirth in the community RNs OBs And other consultants on site clinic q 2-6m and distance consult/transfer if referral needed	Shared care (may be sequential) and shared-on-call Providers work to the fullest extent of their scope of practice. This model is innovative in having alternate practitioners doing epidurals, anaesthesia and some operative intrapartum procedures. Depends on highly skilled RNs as part of intrapartum team *Could be adapted to multi or inter-professional model. Future ideas for the team include: potential to include RMs and or aboriginal RMs; enhanced prenatal education clinic for all women at the hospital, a lactation consultant for prenatal and postpartum, in hospital and by telecare. Doula program, especially with First Nations' members*	Model designed to retain maternity care providers in rural settings and improve quality of life in community with at least 6-8 maternity care providers. Innovative model and staffing to keep as many births in the community as possible, retain the skills of those who only want to do pre or postpartum care and protects the time of those who do intrapartum care. Deals with shortage of anaesthesiologists by having other trained providers, preventing transfers outside community for pain management alone. Requires protocols for assessing risk at the prenatal stage so transfer is limited during intrapartum care. Strong consulting between hospital staff and OB at Level II or III hospital needed. Protects care for rural communities and allows women to give birth close to home. Continuity of care and often continuity of carer. Fee for service remuneration norm with some APPs and salary systems for MDs. Salary for RNs

Established Maternity Care Models

Model Name/ Primary Intrapartum Care Provider	Model Description	Clinical Care	Providers in Model	Opportunities for Shared Call or Collaboration	Community, Population and Institutional Issues
Family Physicians (FP) Rural/Remote model without anaesthesia and surgical capacity	Care model for small community involving shared care between a group of FPs in a Level 1 hospital – linked with FPs and RNs in more remote locations No c-section or anaesthesia capacity Provide services across the continuum of maternity care and 24/7 coverage. Intrapartum care in Level I hospital Scope: low-risk if necessary transfer in labour to OB at a Level II or III hospital Communities served may be spread out and road access limited – transfer may be by air. Volume of practice can range from 20 -200 + births per year	Similar to above model but limited pain management and surgical options. If desire pain management in advance, birth takes place outside of community when possible. If known surgical procedure needed, birth to leave community. At 34 weeks, decision made whether woman can give birth in community or if high-risk transfer to Level II or III hospital Requires protocols for assessing risk at the prenatal stage so transfer is limited during intrapartum care. Strong consulting between hospital staff and OB at Level II or III hospital needed. Protects care for rural communities and allows women to give birth close to home. Maternity care is retained in community but more women need to transfer than in FPmodel with anaesthesia and surgery	FP RNs RN(EC)s OBs and other consultants On site clinic q 2-6m and distance consult/transfer if referral needed	Shared care (may be sequential) and shared-on-call In Marathon in northern Ontario a similar model has a very creative approach to on-call systems: FPs take responsibility for an entire month of due dates and see same women for prenatal, intrapartum and postpartum care, while only taking call for two months per year *Variations: In a small community with low volume of births and 1)a decreasing number of FPs who wish to provide maternity care- a RM could join the team* *2) no FPs who want to provide intrapartum care -a team of RMs could maintain births in the community* *Innovations in telehealth are important supports for this model to support access and keeping care as close to home as possible*	A model designed to retain maternity care providers in rural settings and improve their quality of life in community with at least 6-8 maternity care providers. Appropriate for rural and remote areas Suitable for low-risk women only Protects care for rural communities and allows women to give birth close to home. Women in remote communities must transfer to give birth in hospital, but if low-risk, do not need to travel further. Continuity of care and often continuity of carer Inability to deal with pain management issues or surgical procedures means that some women have to leave community for birth. Have to accept risk-threshold inherent in this model. Fee for service remuneration norm with some APPs and salary systems for MDs Salary for RNs

Established Models of Maternity Care:
Multi-professional

Model Name/ Primary Intrapartum Care Provider	Model Description	Clinical Care	Providers in Model	Opportunities for Shared Call or Collaboration	Community, Population and Institutional Issues
Multi-professional High-risk Care Maternal-Fetal Medicine (MFM) Team	Hospital and home care of women with maternal fetal risk factors requiring closer surveillance Majority of care in a Level III facility If hospitalization is sudden and unexpected, woman transferred to a Level II or III facility closest to home using the Critical transfer process. Land &/or air transport may be involved. Newborn care in hospital by paediatric staff Volumes vary with size of centre – many women seen episodically for consultation with some seen for ongoing care. Mount Sinai the largest centre does >12000 visits /year	With known risk factors, preconception consultation with MFM specialist. referral from any primary provider in the community, at any stage of a woman's pregnancy. Prenatal referral from regular care provider to MFM team, including high-risk OBs, ACNPs specializing in perinatal care and/or consultation with NICU team (Neonatologist and ACNP). Visits may be exclusively in the Level III center or shared with community provider. Primary intrapartum care provider: MFM OB on-call. If complication leading to transfer has resolved (eg. the woman is now at term, she may be transferred back to her local OB, FP or RM for birth. Following delivery, the woman recovers in the L+D or cardiac/ ICU unit, as appropriate The newborn is monitored accordingly (i.e. NICU, Paed, FP, RM). Ideally the newborn is kept with mother but may require transfer to an NICU, SCN. Woman transferred to a post partum unit or to care in a unit without newborns if her baby is not with her (e.g. in NICU, stillborn). Postpartum care at MFM clinic or may return to FP or to local OB for care based on plan of care & level of risk. Newborn followed in an NICU or SCU or mother/baby unit located in the same facility as the mother. Goal is discharge to mom or transfer to a unit closer to the woman's home ASAP.	MFM team MFM OBs ACNPs in perinatal care. OBs: on-call within the Level III center may provide emergency care &/or backup to MFM team. Community caregivers: OBs, FP, RM, RN(EC), in home community who provide a supportive and or shared care role prenatally and intrapartum. May provide post partum care	The MFM team coordinates the care and works collaboratively with other sub-specialty Several key roles for RNs, including ACNP in perinatal care, nursing staff during intrapartum care, APN and nursing role in ICU or CCU, or Highly multi-professional model with a great deal of collaboration. MFM specialist/primary OB the person most responsible for care plans and outcomes. Strong links with community care providers allow early identification of risk And allow continuity of care with an MFM team on whom the woman can depend. *Variations include outreach clinics by MFM OBs to Level II centres – supporting care close to home and local competencies*	High-risk care requires a Level III facility until women and their babies can be transferred back to the community. Safest model of care for women with risk factors. Consistent with OMCEP principle of access to high-risk care May mean periods of time away from one's home or community - local beds are limited and women may have to transfer very long distances. Goal to support as much care as close to home as possible. Team designed to promote continuity of care but multiple providers may make this challenging Remuneration mix of fee for service, APPs and salary systems for MDs. Salary for RNs Fee for service, hospital budgets, APPs

Established Models of Maternity Care: Multi-professional

Model Name/ Primary Intrapartum Care Provider	Model Description	Clinical Care	Providers in Model	Opportunities for Shared Call or Collaboration	Community, Population and Institutional Issues
Sequential Multi-professional Care Model	Care by one provider until 32 weeks gestation, then transfer to another provider for 3rd trimester and intrapartum care Low-risk care to FPs and RMs; high-risk to OBs, consultation as needed Hospital or out of hospital settings This model can work for low-risk or high-risk care of mother and newborn in low or high volume settings	Prenatal care by FP,RN(EC) or RM in woman's community. Primary intrapartum care provider: Transfer of all women at 32 weeks to intrapartum care provider: FP, RM, or OB. RNs provide intra and/or postpartum care in hospital Postpartum care of woman and newborn returns to the original primary provider, in the original setting.	FPs, RMs RN(EC)s RNs OBs and other consultants if referral needed	Sequential care. Variety of systems of call Shared multi-professional care but not to degree of inter-professional collaboration. Community Linkages. Potential for RN(EC) and PHN to have extensive role in early prenatal period. Allows each provider to contribute within their scope of practice *Variations could include opportunities to meet intrapartum providers early in care to improve continuity*	Can be used in most any setting, including small communities, rural and remote areas. For remote areas, care may not switch at 32 weeks but just prior to point of intrapartum care, requiring planned transfer to a hospital, by road or air. Applicable to urban and rural settings Using other community providers for pre and postnatal care frees intrapartum care providers and allows for basic prenatal an postpartum care in one's own community, with a familiar primary care provider. Transfer occurs only for intrapartum care. No guaranteed continuity of care and definitely no continuity of carer. Remuneration may be through CHC, FHN or FHT or hospital funding as well as fee for service for MDs and course of care fees for RMs May be best supported by harmonized payment model for multi and inter-professional practice.

Established Models of Maternity Care: Multi-professional

Model Name/ Primary Intrapartum Care Provider	Model Description	Clinical Care	Providers in Model	Opportunities for Shared Call or Collaboration	Community, Population and Institutional Issues
Aboriginal Health Access Centres	Based on examples at Six Nations and in Thunder Bay Services appropriate to local community, with an emphasis on primary health care, particularly for those without a personal FP. Aboriginal Health Access Centres (AHACs) are located in urban areas and on reserves. Primarily for low-risk prenatal and postpartum of mother and newborn in familiar and accessible setting. 10 AHACs around province	In urban centres, prenatal care provided by RNs or RN(EC)s working in clinic or as a Health Outreach Worker. Worker facilitates link to primary maternity providers in the area. Centres also have an Aboriginal Healthy Babies/Healthy Children Consultant. Primary intrapartum care provider: FP and/or RM may be available at some Centres. Most centres coordinate care for women with intrapartum providers in community: FPs, OBs, RMs and Aboriginal RMs Traditional birth centre may be part of AHAC	RNs RN(EC)s, FPs RMs. OBs and other consultants On site clinic q 2-6m and distance consult/transfer if referral	Sequential care from the AHAC to an area hospital and then back again. Urban, rural and remote birth centres can be part of centre or linked to it -care by Aboriginal RMs and/or other traditional healers possible. *Could be adapted to a inter-professional model*	Located in urban centres and on First Nations. In urban areas may be main place for primary health care. Access for women without an ongoing FP RNs practise to full scope for pre and postnatal care freeing up intrapartum care providers Facilitates care integrated with cultural beliefs. Supports women giving birth with Aboriginal RMs Supports the OMCEP principles for birth close to home, as a normal physiological process, continuity of care and possibly carer, culturally appropriate. Remuneration for care providers by salary/blended models in a joint federal provincial program. May be best supported by harmonized payment model for multi and inter-professional practice.

New and Innovative Models of Maternity Care:
Inter-professional - Regional

Model Name/ Intrapartum Care Provider	Model Description	Clinical Care	Providers in Model	Opportunities for Shared or Call or Collaboration	Community, Population and Institutional Issues
Inter-professional Collaborative Care across region in both large and small hospitals/centres	Team provides full services across continuum of maternity care. Low & high-risk pregnancy Team practice in which each care provider practises to full scope; Includes psychosocial as well as clinical support. Care by or referral to specialists, including OBs, Maternal Fetal Medicine and other consultants as part of team. Woman may choose/be assigned to a specific team or provider.	Woman registers with service and has choice of inter or single professional team to see her through pregnancy. Antenatal care by FP teams or FP and RN(EC) partnerships; RM teams; OBs teams with RN(EC)s to provide educational prenatal care; or RN(EC) teams. Could use Centering Pregnancy group prenatal care approach. Possibility of having labs, ultrasounds and other consultants seen on-site. If woman assigned to inter-professional team, FP, OBs or RM on-call from that team provides care that day with RN assisting. If complications, transfer to a consulting OB. RMs can provide births and postpartum care in home. All women followed for at least 6 weeks postpartum by antenatal team. After 6 weeks, ongoing care provided by regular FP, public health nurse where available, well-baby or Early Years or other parenting support	FPs, RMs and OBs providing full continuum of care. (some FPs may only provide prenatal and postpartum care only). OBs as consultants when needed for high-risk care are part of team. RN(EC)s or RNs provide prenatal and postpartum care and some support during intrapartum care. PHNs where available. Paediatrics/Maternal Fetal Medicine experts and other specialists as needed	Inter-professional and Collaborative. Shared care systems and shared on-call systems, teams have shared philosophy and practice guidelines. Size of team and ratio of care providers can vary with size of community – all teams have both primary and consultant care providers. f FP/OB/RM/RN(EC)/RN Each team, would however, have a common base of services, though in smaller rosters some of the services may have to be delivered by outside referrals, consultants, use of remote technology suitable for high and low volume – but must be scaleable to community above 4-5 providers. Allows for evolution of more than one kind of team based on community resources/needs.	Appropriate for any mid- or large-sized community hospital. Teams in small community settings can partner with regional hospitals nearby to create a larger umbrella of services for women. Community retains the skills of those who want to do prenatal/postpartum care and protects the time of those who do intrapartum care. Communities with limited numbers of practitioners and mix of practitioners can “share” the prenatal and postpartum work and protect the time/energy of those wishing to provide intrapartum care for that service alone All-in-one service in the Centre, including for OB care. Home births possible where RMs are on teams. Inter-changeability of low care risk providers. With assigned team: no continuity of carer. Designed to be a complete service in a community so care would be close to home.

Innovative Models of Maternity Care:
Multi-professional/Inter-professional

Model Name/ Primary Intrapartum Care Provider	Model Description	Clinical Care	Providers in Model	Opportunities for Shared Call or Collaboration	Community, Population and Institutional Issues
Family Health Team FHT) [6]	Provide care in keeping with FHT philosophy Services across the continuum of maternity care and 24/7 coverage. May work together in one setting or multiple settings Births in hospital if with FP and RM. Choice of birthplace with RMs. OB consultation as needed. Low-risk maternal and newborn care within scope of provider Volume depends on size of FHT and number of intrapartum care providers	Prenatal and postnatal care could involve FPs, RN(EC)s and/or RMs Primary intrapartum care provider: FPs and/or RMs. RNs work with FPs and RMs during intrapartum or postpartum period Other FHT members would play roles as appropriate FHT that doesn't provide intrapartum care may collaborate with FHT that does	FPs RMs RNs RN(EC)s Access to full range of FHT members as needed as part of either multi or inter-professional team e.g., nutritionist, social work, pharmacist OBs and other consultants if referral needed	Each FHT would design its own model of care and call system If multi-professional team where FPs do not do intrapartum FPs/RN(EC)s in FHT refer to group of RMs for shared prenatal and intrapartum care. Care back to FPs/RN(EC)s for shared postpartum care *Inter-professional team could involve shared prenatal and intrapartum care and on-call coverage with FP/RM team* *Care could also be organized around choice of intrapartum care provider: with FHT offering access to care by FP team, RM team or OB team*	Mix & availability of care providers determined by community. Flexible to large or small communities Services close to home for small communities. Ideal for low-risk women when FPs and RMs provide care for uncomplicated pregnancies. Supports FPs and RMs in balancing their workload and stress. Continuity of care within the team/group practice Shared on-call may free up ability to service larger number of women or even protect a service at risk of closing. May or may not include continuity of carer depending on-call system See Guidelines for funding FHT services – may be a mix of methods[7] May be best supported by harmonized payment model for multi and inter-professional practice.

Innovative Models of Maternity Care: Multi-professional/Inter-professional

Model Name Primary Intrapartum Care Provider	Model Description	Clinical Care	Providers in Model	Opportunities for Shared Call or Collaboration	Community, Population and Institutional Issues
Rural Hospital Multi or Inter-professional Small Group Practice	Maternity care in a small rural hospital with road access to tertiary care centres. Team of 3-6 intrapartum providers (FPs and RMs) and 3-6 RNs Home births offered by RMs Low-risk maternal and newborn care and referral to OB at Level II or III hospital if needed Low volume <150 births a year up to 300 births per year.	Prenatal care provided by team of 3-6 RNs with referral to on-call FP or RM.(or FP in emergency if needed) Primary intrapartum care provider: Woman receives care from FP or RM on-call that day. The provider on-call does not have regular clinics that day so as to be easily available. RNs providing intrapartum care rotate their on-call status and pre and postnatal care work. OB at Level II or III hospital visits every 2-6 months to consult as needed and determine if transfer of care is required for those at risk 3-6 RNs provide postpartum care, including home visits, if required, until feeding established (10 to 28 days following birth) along with FP or RM in shared care model. Public Health home visits begin after that point, if necessary.	FPs RMs RNs OBs and other consultants On site clinic q 2-6m and distance consult/transfer if referral needed	Shared on-call between FPs or FPs and RMs. Variety of systems of call possible. RNs also rotate on-call status. Potential for inter-professional care or collaboration between FPs and RMs, depending on configuration in the hospital, with shared philosophy of care, policies and protocols Requires protocols for assessing risk at the prenatal stage so transfer is limited during intrapartum care. Strong consulting between hospital staff and OB at Level II or III hospital needed. *Variations: roles of RNs and FPs and RMs re pre and postnatal care could vary depending on community needs*	Ideal for small community or rural hospital that does not have an OB on-staff. This team practice can maintain a maternity service at a smaller, low volume hospital, preventing provider burnout and the loss of a region's local maternity care services. RNs practise to full scope for pre and postnatal care freeing up intrapartum care providers Fills a need for maternity services close to home for small communities and rural areas. Low-risk women have services across the continuum in one setting, but may not have continuity of care as she sees whoever is on-call. Remuneration may be through CHC, Family Health Network or FHT or hospital funding as well as fee for service for MDs and course of care fees for RMs. May be best supported by harmonized payment model for multi and inter-professional practice.

Established Models of Maternity Care:
Multi-professional/Inter-professional

Model Name/ Primary Intrapartum Care Provider	Model Description	Clinical Care	Providers in Model	Opportunities for Shared Call or Collaboration	Community, Population and Institutional Issues
Community Health Centres (CHCs) - Ontario) **Centres Locaux de Services Communautaires (CLSCs : Quebec)**	Variation A: CHC provides primary care to own patients and those without an ongoing FP, including pre and postnatal care, can provide care to non-status immigrants Intrapartum providers accessed on staff or by referral Low-medium risk Birth in hospital (or in home if with RM) Variation B: CLSCs similar to Community Health Centres but, unlike Ontario midwifery in which midwives are contractors, RMs in Quebec are employed by CLSCs and clients may choose to give birth in birthing centre located in or affiliated with CLSC	Variation A: CHCs: prenatal and postpartum care from multi-disciplinary team, including risk assessment, well woman and newborn care, education and counselling on pregnancy, labour, birth and baby care. Primary intrapartum care provider: RM, FP or OB - referral may be at various points – often referral to OBs at 36 weeks Centres often hold drop-in support groups and breastfeeding counseling Variation B: CLSCs: offer care as above but also offer RM-led care for pre, intra and post partum care within multi-disciplinary team –choice of birth in birthing centres, home birth or hospital if with RM	Depends on community needs and funding. Providers may include: FPs; RMs OBs RNs RN(EC)s OBs and other consultants if referral needed	Highly inter-professional model involving several groups. More collaborative for prenatal and postpartum than for intrapartum care. *Could be multi or inter professional model*	Mix & availability of care providers determined by community. A: Continuity of care within the team/group practice but not always continuity of carer. B: Continuity of carer An:RNs practise to full scope for pre and postnatal care freeing up intrapartum care providers Ideal for women considered psychosocially high-risk because of other services right on-site. Since CHS and CLSCs are based in certain communities and neighbourhoods, they can be adapted for each and so be culturally appropriate. Birth centres can offer visible support for normal birth and low-risk approaches to care Remuneration for CHC staff salary including intrapartum care or separate intrapartum care fee for service for MDs, per course of care for RMs. May be best supported by harmonized payment model for multi and inter-professional practice.

Innovative Models of Maternity Care:
Inter-professional

Model Name/ Primary Intrapartum Care Provider	Model Description	Clinical Care	Providers in Model	Opportunities for Shared Call or Collaboration	Community, Population and Institutional Issues
Urban Inter-professional Care in Diverse Community	Based on the South Vancouver model [8]Team-based maternity care to low-risk women Serves diverse community where many residents have a language other than English as their first language Low-risk - FP and RM care of women and newborns with access to OB care as needed. Hospital births in Level III facility Volumes could vary from 100-400 births depending on size of team	One intake clinic visit and then group prenatal care and education with 8-12 women per group for 10 sessions, led by Public Health RN and RM or FP. RM or FP-does a 3-minute "belly check". Based on Centering Pregnancy method[9] Primary intrapartum care provider: FP or RM with nursing care in labour and/or postpartum. Doulas involved in prenatal groups and Postpartum care shared between FPs, RMs and PHN Women then return to care of their regular FPs	FPs RMs FPs PHN RNs Doulas OBs and other consultants if referral needed	Amount of on-call depends on size of group and call system. Inter-professional shared care group with a system of shared prenatal clinics, shared on-call, team meetings and inclusion of several groups Shared philosophy of care policy and protocols or share team meetings Collaboration with doula in cultural context –education of doulas at centre to work on team and bring cultural and language resources *Variations include using in other models: eg using doulas as cultural interpreter, group prenatal care*	Diverse neighbourhood in large urban setting. Could be duplicated in smaller settings as well. Doula training for women from diverse communities so support throughout continuum in languages of community RNs practise to full scope for pre and postnatal care freeing up intrapartum care providers Supports the OMCEP principles for birth close to home, as a normal physiological process, culturally-appropriate. Continuity of care within the team/group practice but not always continuity of carer. Benefits to women with social challenges and language barriers high-risk because of level of support Remuneration by fee for service for MDs and course of care fees for RMs pooled to pay same fee to both. Doulas funded through PHCTF grant and RNs through public health funding. May be best supported by harmonized payment model for multi and inter-professional practice.

Innovative Models of Maternity Care: Inter-professional

Model Name/ Primary Intrapartum Care Provider	Model Description	Clinical Care	Providers in Model	Opportunities for Shared Call or Collaboration	Community, Population and Institutional Issues
Remote Midwifery Service Within Inter-professional Team	Based on Nunavik model[10] RM-led inter-professional model for remote communities, Transfer by air. Consultation with FPs on site or in Level I hospital. Consultation with obstetrics or paediatrics by distance technologies and by medevac as needed. Biannual visit by OB to communities. Low and high-risk care of all pregnant women and babies in community. Low-risk birth in community – academic and clinical education for local women built into model Can work in communities with volumes of 30 births or even less if RMs work in extended role and usually up to 100 births per year	RMs or RNs provide pregnancy tests, prenatal care and education regardless of a woman's risk status. FPs see all women and perform an early history and physical and give input to care plan appropriate to level of risk. Care plan for all women reviewed at 34 weeks by inter-professional team to determine care recommendations and birth location. Primary intrapartum care providers: two RMs and/or a RN attend each birth as available Women in communities with no birth centre transferred to closest birth centre at 37 weeks. Postpartum care by RMs and RNs in own community. FP resumes care at 8 weeks unless concerns. RMs have expanded roles and scopes in the areas of community health and emergency care. They provide well woman and well baby care, and play an active role in sexual health and health education an promotion	RMs RNs FPs Inter-professional education as part of service OBs and other consultants On site clinic q 2-6m and distance consult/transfer if referral needed	Collaborative model: Collocation of all providers. Shared care by most appropriate care providers. Team meetings and team review of all cases Can assist health systems to respond to community desire to bring birth back to small communities and education of local care providers .to provide care in local language and culture Supports RNs to maintain intrapartum skills in remote settings *Variations: approach to community based education for aboriginal RMs could be integrated in other non-remote settings*	Rural and remote areas and/or for aboriginal communities . Allows women to receive care in their own communities, language and culture. Supports women giving birth with aboriginal RMs, supports Midwifery education in local communities RMs practise to their fullest scope and free RNs and MDs to meet other needs in communities where resources are scarce – can assist in recruitment of physicians to remote community who do not do intrapartum care Supports the OMCEP principles for birth close to home, as a normal physiological process, continuity of care and carer, culturally appropriate. RMs, RNs and physicians are employees of local health centres on salary May be best supported by harmonized payment model for multi and inter-professional practice.

New and Innovative Models of Maternity Care: Inter-professional

Model Name/ Primary Intrapartum Care Provider	Model Description	Clinical Care	Providers in Model	Opportunities for Shared Call or Collaboration	Community, Population and Institutional Issues
Inter-professional Collaboration Maternity Centre	Adapted from Hamilton Maternity Centre[11] Maternity Centre with services across the continuum of maternity care and 24/7 coverage. Intrapartum care in hospital (Level I, II or III) Primarily, but not exclusively, for low-risk women and newborns. Consultation with OB as required Allows for relatively high volume FP maternity care	RN(EC) coordinate all stages of pre and Postpartum care. RN(EC) or FP provide Prenatal care and education. Roster of FPs who take turns seeing women For prenatal care requiring a physician check. Primary intrapartum care provider: FP on hard-call system 24 hours for Deliveries. Nursing care by staff RN during Intrapartum and postpartum. If complications develop, transfer to an OB at a Level II or III hospital. RN(EC) provides one visit post partum in the Hospital. Post partum care is then provided by own FP or Maternity Centre FP if women requests Shared care model.	RNs RN(EC)s with FPs. OBs and other consultants if referral needed	Hard call system to support work-life balance and encourage FPs to participate in maternity care. Amount of on-call depends on size of group and call system Highly collaborative model with shared philosophy of care policy and protocols and team meetings Collaborative systems and on-call arrangements helped retain providers and recruit new ones *Could also include RMs, obstetricians and others in inter-professional team or in multi-professional environment*	Located in an urban setting but could be duplicated in mid-size community, or scaled down for smaller community. Provides continuity of care but not carer. Supports a primary care model and birth as normal physiological process RNs practise to their full scope for pre and postnatal care freeing up intrapartum care providers Visible primary maternity centre can offer support for normal birth and low-risk care providers Relatively high volume predictable practice maintains both confidence and lifestyle and supports recruitment and retention Fee for service APPs and salary systems combined. Could be organized as FHT. Salary for RNs in hospital

New and Innovative Models of Maternity Care: Inter-professional

Model Name	Model Description	Clinical Care	Providers in Model	Opportunities for Shared Call or Collaboration	Community, Population and Institutional Issues
Inter-professional FP and RM practice	Adapted from Children's & Women's Health Centre of BC. Primary Maternity Care Model[2] Provide services across the continuum of maternity care and 24/7 coverage. A FP and RM group practice for women whose regular FP does not provide intrapartum care. 24-hr on-call system for maternity issues Low-risk care for women and newborns whose regular FP does not provide intrapartum care. Volumes vary with size of team	FPs and/or RMs work together in a clinic and share clinic hours and prenatal care. A primary caregiver is assigned to each woman, preferably introducing her to a second team member who shares clinic hours. Woman and family meets the entire team at a "Meet the RMs and Doctors Night" Primary intrapartum care provider: 3-8 practitioners share call equitably on a 24-hour call schedule. One RM or doctor attends all calls in that 24-hour period. Woman may not have her prenatal provider for intrapartum care Nursing care by staff RNs during intrapartum. One postpartum visit by intrapartum provider with nursing care during postpartum stay and then woman and infant referred back to regular FP or health clinic	Any configuration of FPs and RMs, RNs OBs and other consultants if referral needed	Shared Call in hard call system Amount of on-call depends on size of group and call system up to 6-8 suggestion to make shared call system work. Inter-professional sharing or collaboration for prenatal and intrapartum care. Amount of collaboration may vary with practice but ideally members have shared values and commitment and team meetings *Variations include extending postpartum care before referring back to previous provider-can be applied with different call systems*	Any size community that contains 3-6 providers committed to shared and/or collaborative care. Could be several groups in urban centres. This team practice can maintain a maternity service at a smaller, low volume hospital, preventing provider burnout and the loss of a region's local maternity care. Provides some continuity of care within the team but often not continuity of carer. Supports work-life balance and limits on-call for care providers. Limited postpartum follow-up. Ideal for women with strong regular FP support or tie-in with a community health clinic. Fee for service remuneration norm with some APPs and salary systems for MDs. Course of care payment for RMs. Salary for RNs May be best supported by harmonized payment model for multi and inter-professional practice.

New and Innovative Models of Maternity Care: Inter-professional

Model Name	Model Description	Clinical Care	Providers in Model	Opportunities for Shared Call or Collaboration	Community, Population and Institutional Issues
Birth Centres for Inter-professional Education and Practice	Birth Centre affiliated with education programs and teaching hospitals Services across the continuum of maternity care and 24/7 coverage. Inter-professional care team Providers can be on staff as part of birth centre core team or hold privileges to attend births at centre Low-risk mothers and babies < 24 hour stay in centre and f/u home visits Transfer to hospital if indicated and/or intrapartum consultation with OB needed Could be high or low volume –higher volume supports student experience (300-500 births per year)	Various possibilities depending on team mix, agreement, and population being served Prenatal care is on site by birth centre core team of RN(EC)s, FPs and RMs, or by community provider who has privileges at the centre. Primary intrapartum care provider: FP or RM team member if primary unavailable. RNs on-call for labour care with FPs and/or RMs Postpartum care in centre by intrapartum provider with RN or RN(EC) with continuity from pre or intrapartum. Postpartum home visits by RN/RN(EC) and/or RMs.	FPs RMs RN(EC)s RNs Public Health Nurses OBs and other consultants if referral needed	Opportunities for shared care are determined by the needs and preferences of the care-providers and community Various call systems possible. Amount of on-call depends on size of group and call system Shared philosophy of care, policies and protocols or shared team meetings for core team and liaison with all care providers with privileges Excellent opportunities for inter-professional education and education for normal birth *Many variations possible: a birth centre could be multi-professional, inter-professional or midwifery-led, family practice*	Medium to Large Urban Setting. Affiliated with teaching programs and hospitals Scalable to high and low volume Continuity of care, continuity of carer Depends on-call system Supports OMCEP principles of choice of birthplace, care close to home and birth as a normal physiologic process and inter-professional education RNs practise to full scope for pre and postnatal care freeing up intrapartum care providers Ideal for women with low-risk medical needs but can accommodate women with low or high-risk social or mental health needs. Ideal for learning and teaching about normal intrapartum care Remuneration may be through global budget and/or fee for service for MDs and course of care fees for RMs

Bibliography

1. Lofsky S, Adamson M. Changing trends in obstetrical physician resources in Ontario 1992-2003. Report to "Babies Can't Wait". 2005 Mar.

2. Price DJ, Lane C, Klein MC. Maternity care by FPs: characteristics of successful and sustainable models. JOGC 2005 May;27(5):460-66.

3. Ontario Midwifery Program, Ministry of Health and Long-Term Care.

4. College of RMs of Ontario. Exemption for Aboriginal RMs. 1994 Jun. Available from: http://www.cmo.on.ca

5. College of RMs of Ontario. Continuity of care. 1994 Jun. Available from: http://www.cmo.on.ca

6. Ministry of Health and Long-term Care. Family health teams [public information]. Available from: http://www.health.gov.on.ca

7. Ministry of Health and Long-term Care. Family health team: Guide to inter-professional provider compensation. 2006 Feb 28. Available from: http://www.health.gov.on.ca

8. The South Vancouver Birth Program: A new model of maternity care. Collaboration for Maternal and Newborn Health Conference: Maternity Care in the 21st Century. Vancouver; 2005 Feb.

9. Rising SS. Centering pregnancy: An inter-professional model of empowerment. Journal of Nurse-Midwifery 1998 Jan/Feb;43(1):46-54.

10. Epoo B, Nastapoka U, van Wagner V. Bringing birth back to the community: Midwifery in the Inuit villages of Nunavik. Proceedings of the International Confederation of RMs, July 2005.

11. Price D, Howard M, Shaw E, Zazulak J, Waters H, Chan D. Family medicine obstetrics: collaborative inter-professional program for a declining resource. Canadian FP 2005 Jan;51:68-74.

Anesthesia Services For Maternity Care in Ontario

Key Issues & Barriers to Service Provision in Hospitals with Non-tertiary Obstetric Programmes

Potential Solutions Proposed by Maternity Anesthesia Stakeholders in Hospitals with Tertiary & Non-tertiary Obstetric Programmes

Submitted in Preliminary Form to the Ontario Maternity-Care Expert Panel, September 2005
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Introduction & Background

Anesthesiologists and Family Physician Anesthetists are vital members of the interdisciplinary team working to provide high quality woman-centered maternity care in Ontario. Existing data suggest that these physicians provide care to more than 50 percent of Ontario women during childbirth. Services provided include pain relief during labour and delivery, anesthesia for operative vaginal deliveries and for elective, urgent and emergency cesarean sections, postpartum pain management, medical consultation related to maternity anesthesia service provision and co-existing disease, neonatal resuscitation, emergency and intensive care and maternal resuscitation during labor, delivery and the postpartum hospital stay.

Current Obstetrical Anesthesia Service Utilization

A recent report on maternity care in Ontario, which captured 84 percent of Ontario births in 2003, found that 59.4 percent and 25 percent of women with vaginal births in large and small community hospitals (respectively) received epidural analgesia (PPPESO, 2005a). In addition, use of epidural analgesia, the gold standard form of labour analgesia, appears to be increasing with epidural rates in small community hospitals rising from 8.1 percent in 1998 to 25 percent in 2004 (PPPESO, 2005b). Anesthetic care was also required as an essential service by the 26.6 percent of Ontario women delivering by cesarean section in 2003 (PPPESO, 2005a).

Availability of Obstetrical Anesthesia Services in Ontario

Notable disparities currently exist in the accessibility of maternity anesthesia services provided in hospitals across Ontario. These disparities are increasingly apparent as hospital distances increase from major teaching centres and as delivery rates decrease. Access issues are most evident in small community, rural and rural remote locations. These are in part due to the existing and increasing shortage of physicians providing anesthetic services in Canada and worldwide (Byrick, et. al., 2002; Engen et al., 2005).

The OMCEP (2005) hospital survey provided some insight into Ontario's capacity for obstetrical anesthesia services. Results of the survey indicate that maternity anesthesia services are provided by anesthesiologists in 72 percent of hospitals and family physician anesthetists in 23 percent of hospitals (n=98). Sixty percent of hospitals reported that they provide obstetrical anesthesia services 24/7 for both pain management and cesarean section. Six hospitals reported that both Anesthesiologists and Family Physician Anesthetists provided obstetrical anesthesia care in their institution. In 25 percent of hospitals, labour epidurals were provided only when an anesthesiologist was available. In eight percent of hospitals, anesthesia coverage was limited to cesarean deliveries.

Results of the OMCEP (2005) hospital survey also indicate that 70 percent (n=65) of Ontario hospitals (n=92) providing maternity services do not always have the capacity to provide 24/7 cesarean section services. Sixty-two percent (n=40) of these hospitals

attributed lack of availability of Anesthesia coverage as the most important limiting factor in providing cesarean sections.

Family physician anesthetists represent an unheralded group of physicians making a noteworthy contribution to anesthesia service provision in Ontario. A recent survey (82% response rate) found that 39% of all hospitals (n=108) in Ontario rely solely upon Family Physician Anesthetists for anesthetic services and that these physicians largely practice in small community, rural and rural remote hospitals in Ontario that do not attract specialist Anesthesiologists (Brown et al., 2005). The authors reported that between 1988 and 1995, the number of Family Physician Anesthetists available for work in small community hospitals dropped by 24%, reducing the availability of anesthetic services, particularly those performed after hours. Of note, these reductions followed cessation of dedicated funding to university-based one year Anesthesia training programmes for Family Physicians in Ontario in 1992.

Projecting future human resources for obstetric anesthesia services in Ontario

Forty-six percent of hospitals surveyed by OMCEP (2005) projected that the number of births in their hospital would increase over the next year while 46 percent projected that their number of births would stay the same (n=96). At the same time 36 percent of hospitals projected that the demand for epidurals would increase, while 54 percent anticipated no change (n=96). In addition, 34 percent of hospitals projected an increase in the rate of cesarean section over the next year whereas 51 percent anticipated no change.

The current world-wide shortage of physicians providing anesthetic care has made maternity service provision difficult in even relatively well-resourced academic and large community hospitals. Other professions such as Obstetrics & Gynecology, Family Medicine, Midwifery and Nursing face similar human resources issues. The impact of these shortages on maternity services in Ontario hospitals, in particular in those with low volumes of deliveries (<2000 per annum), is of particular concern.

The present study was conducted to identify key issues and barriers to provision of maternity care faced by Anesthesiologists and Family Physician Anesthetists delivering care in hospitals with non-tertiary obstetric programmes across Ontario. While we report the range of maternity anesthesia practices found in University teaching hospitals to rural remote Ontario, this study was conducted to explore, in particular, issues faced by those physicians providing maternity anesthesia care in non-tertiary obstetric centres with less than 2000 deliveries per annum and level 1-2 neonatal care. In addition, an effort was made to examine potential solutions to the issues identified by these low volume programmes. The latter endeavour occurred in the setting of a “Finding Solutions” mixed focus group held with Anesthesiologists and Family Physician Anesthetists representing hospital practices ranging from those found in University-based teaching centres to those in rural remote Ontario.

The recommendations made at the end of this paper are derived 1) the results of the Maternity Anesthesia Survey; 2) from the overall themes emerging from focus groups with non-tertiary low volume (<2000 deliveries) and large volume (≥ 2000 deliveries) obstetric centres; and 3) most importantly, the solutions proposed by physicians participating in the final " Finding Solutions" mixed focus group

Study Objectives

- To explore key issues and barriers to provision of maternity anesthesia care in Ontario hospitals with non-tertiary obstetric programmes and small volumes of deliveries (<2000 per annum, level 1-2 neonatal care).

- To explore key issues and barriers to provision of these same services in larger non-tertiary obstetric hospitals (≥2000 deliveries per annum, level 2+ neonatal care) as well as assess a potential role for such hospitals in knowledge transfer to smaller surrounding obstetric centres.

- To present the issues and barriers identified in non-tertiary low volume obstetric centres to a mixed physician focus group, representing key obstetric anesthesia stakeholders in practices spanning rural remote to University-based teaching programmes across Ontario, in order to examine potential solutions.

- To use study findings to inform development of a set of recommendations related to the:

  1) key strategies required in the short term to sustain existing maternity anesthesia services in hospitals with non-tertiary obstetric programmes; and,

  2) key mid-term strategies and infrastructures required to:

     a. support human resource renewal as well as retain current anesthesia providers in programmes at risk; and

     b. facilitate knowledge transfer related to "best practices" between tertiary and non-tertiary maternity anesthesia programmes.

Methods

A mixed methods sequential research design was employed. Findings from each study phase were used to inform the direction of questions developed for subsequent study phases.

Phase 1. As anesthesia services for maternity care likely vary across Ontario, the purposeful sampling strategy of maximum variation was used to permit exploration of major variations, illustrate subgroups, and capture patterns that might reflect important shared practices and experiences among physicians providing anesthesia services. (Patton, 1990; Miles & Huberman, 1994; Sandelowski, 1995).A purposeful sample of hospitals with non-tertiary obstetric programmes, low volume deliveries (<2000 per annum) and level 1-2 neonatal care, representing all geographic locations across Ontario was taken from a Ministry of Health contact list. Hospitals were contacted using telephone lists provided in the Canadian Medical Directory (2005). The names of department of Anesthesia Chiefs, Directors of Obstetric Anesthesia or next most responsible anesthesia provider (or next most available anesthesia provider when these persons could not be reached) were identified and then contacted by telephone for an introduction to the study and an invitation to participate. This sampling strategy also allowed for recruitment of anesthesia providers who differed in terms of qualifications as well as those from departments of anesthesia with different levels of human resources. In addition, this strategy enhanced the rigor of the study by allowing a more generic description of anesthesia providers' experiences to emerge (Marshall & Rossman, 1995).

Participants were asked to complete a demographic and practice survey related to current maternity anesthesia care at their primary hospital of employment. Practice information obtained was related to the spectrum of anesthetic services available for pain relief during labour and maternal access to these services. Information was also obtained related to post-cesarean pain relief following operative delivery, most common techniques used to provide anesthesia for cesarean deliveries (eg spinal, epidural, combined spinal epidural or general anesthesia), and the drug regimens and other analgesic techniques (wound infiltration, nerve blocks) used routinely in their hospitals for post cesarean analgesia.

Participants were also invited to join a focus group to discuss key issues and barriers to provision of anesthetic maternity services in their hospitals. Three focus groups were conducted via telephone conference for this study phase with Anesthesiologists and Family Physician Anesthetists, each lasting from 1.5 to 2hours, using a semi-structured interview guide. Practice information obtained in the questionnaire was further explored in addition to individual hospital culture related to labour pain relief, mechanisms whereby women access labour analgesia once requested, obstacles to provision of maternity anesthesia services over a 24 hour period, issues related to skills upgrading and maintenance, continuing medical education, and recruitment and retention of physicians providing anesthetic care.

Additional questions were asked related to potential roles for alternative anesthesia providers and existing relationships and difficulties with other stakeholder professions involved with maternity care. All sessions were audio taped and transcribed verbatim.

Phase 2: Using the methodology described above in Phase 1, chiefs of anesthesia, or directors of obstetric anesthesia (when applicable) or the most responsible person otherwise most responsible for maternity anesthesia services provision were identified in large community hospitals with ≥ 2000 deliveries per annum or level 2+ neonatal care. These people, representing hospitals across all geographic areas in Ontario, were contacted and invited to participate in the study. Respondents were asked to complete the same Maternity Anesthesia Services Questionnaire used in Phase 1 as well as to join a focus group. Focus groups were conducted using questions covering the same content as that covered in Phase 1. Potential mechanisms by which knowledge transfer might be possible between high (≥ 2000 deliveries) volume non-tertiary obstetric hospital and low volume (<2000 deliveries) hospitals was also explored. These hospitals were initially identified as a potential source of information related skills and knowledge transfer by phase 1 focus group participants. Participants in hospitals with low delivery rates believed that high volume non-tertiary obstetric units might work in practice environments more similar to their own (compared with tertiary units) and therefore might represent a more suitable source of knowledge transfer in the future.

Phase 3. University Department of Anesthesia Chiefs, Directors of Obstetric Anesthesia programmes in tertiary centres across Ontario, key academic obstetric anesthesia informants and key informants identified in Phase 1 and 2 focus groups from non-tertiary obstetric programmes were invited to participate in a "Finding Solutions" focus group. Participants from tertiary obstetric centres were also asked to complete the same practice survey distributed to respondents in Phases 1 and 2. The semi-structured questionnaire used to facilitate the Finding Solutions focus group was informed by responses obtained in Phases 1 and 2. The findings of Phases 1 and 2 focus groups were presented to Phase 3 participants in order to: 1) member check key findings with Phase 1 and 2 participants, and; 2) provide context for participants from University-based obstetric anesthesia programmes. Phase 3 focus group members, representing practices from tertiary obstetric, large regional, small community, rural and rural remote anesthesia practices, then proceeded to brainstorm, discussing each of the major issues/key barriers identified by hospitals with low delivery rates and potential solutions to these barriers.

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Analysis

Survey Data: Descriptive statistics were used to summarize the survey data, i.e. demographic characteristics of participants, their hospitals, spectrum of obstetrical anesthesia services provided and a description of routine practices related to labour and delivery and postpartum analgesia. In the case where more than one respondent came from the same hospital, responses describing the hospital and maternity anesthesia practices were taken from the questionnaire provided by the person most responsible for maternity anesthesia services in that hospital.

Focus Group Data: Qualitative content analysis was used to describe the key issues and solutions that emerged from the data (Sandelowski, 2000). This strategy is oriented to summarizing the latent and manifest data describing the phenomenon of interest and is considered the least interpretive of the qualitative analysis strategies (Altheide, 1987; Morgan, 1993; Sandelowski). Audiotapes and field notes were transcribed verbatim and the transcripts were reviewed for accuracy and analyzed by the researcher and a colleague. Coding of data and data management were done with the assistance of NVivo QSR 2.0. The analysis concentrated on parts of the focus groups' data in which physicians discussed issues related to provision of obstetrical anesthesia services and potential solutions. A provisional list of codes was developed from the research questions posed by the researcher and a colleague (Miles & Huberman, 1984) and applied to chunks of the data. This was followed by pattern coding (Miles & Huberman). Memos were made while coding to link observations and enable inferences from the data to be made (Miles & Huberman). Codes representing similar ideas or patterns within and across focus groups were then clustered into categories (themes). Lastly the categories were synthesized to obtain broad overarching themes representing major issues and solutions identified from the data (DeSantis & Ugarriza, 2000; Leininger, 1985; Polit & Hungler, 2001; Sandelowski; Watson, 1985

Results

Maternity Anesthesia Practice Survey

A total of 24 different hospitals, spanning all geographic areas and community types (urban, small and large community, rural and rural remote) across Ontario were represented by respondents. A map of the geographic areas represented by hospital practices in the study is provided in Figure 1 (Appendices).

A total of 28 respondents (Anesthesiologists, n= 17; Family Physician Anesthetists, n=11), representing chiefs of department, directors of obstetric anesthesia, key informants in obstetric anesthesia or the next most responsible (or next most available person in some small hospitals), responded to the questionnaire. Respondents' information related to their primary hospitals of work providing full representation of the spectrum of maternity anesthesia care practices in Ontario, ranging from university-based obstetric anesthesia teaching programmes to those found in rural remote communities. Demographic characteristics of survey respondents are presented in Table 1 (Appendix).

Department of Anesthesia characteristics are presented by hospital delivery volumes in Tables 2 & 3[1]. Family physician anesthetists represented seventy-one percent of those most responsible for maternity anesthesia practice in hospitals with <2000 deliveries per annum whereas specialist anesthesiologists represented 100% of those most responsible for maternity anesthesia services in larger ≥2000 regional and tertiary obstetric centres. University teaching and large community hospitals were staffed almost exclusively by specialist Anesthesiologists whereas smaller community, rural and rural remote hospitals were staffed by departments comprised mostly or entirely by Family Physician Anesthetists. Epidural rates decreased as anesthesia staff volumes and delivery volumes decreased Large differences in annual labour epidural rates and wait times were reported between low volume (range 5-35%) and large volume obstetric centres (60-80%) irrespective of tertiary vs non-tertiary hospital status. (Tables 2 & 3). Average epidural wait times were 4-6 hours (for those women actually receiving the service) in small volume centres whereas wait times were similar in large volume non –tertiary centres and tertiary obstetric centres (range <30minutes-lhour versus ≤ 30minutes respectively). Methods used to provide anesthesia for elective cesarean section were similar between groups (Table 4).

Focus Groups

[1] In the case where more than one person answering the survey came from a single institution (4 cases total), responses from the person deemed most directly accountable for maternity anesthesia services in that hospital were used in the analysis.

It is noteworthy that the invitation to participate in this study met with an overwhelming response from Anesthesiologists and Family Physician Anesthetists from across the province. The sincere desire to provide high quality maternity anesthesia care, based on up-to-date knowledge of best practices was readily apparent across all groups of physicians. The vast majority of participants also voiced an interest in the future collaborative work required to develop solutions to the issues identified.

Participants

24 of 28 physicians completing the maternity anesthesia questionnaire also participated in at least one focus group. A total of five focus groups were conducted. Each focus group lasted between 1.5 to 2.5 hours. Physicians in these groups represented maternity anesthesia practices in 21 different hospitals across Ontario. Demographic characteristics of the 24 participants are found in Table 5 (Appendices).

Fifteen physicians (Anesthesiologists, n= 4; Family Physician Anesthetists, n= 11) participated in one of the first three focus groups conducted to identify key issues and barriers to maternity anesthesia provision in hospitals with < 2000 deliveries per annum (Phase 1). These respondents represented maternity anesthesia practices in 14 hospitals. Five physicians (Anesthesiologists n=5) from hospitals with $\geq$ 2000 deliveries participated in a focus group designed to discuss issues and barriers in hospitals with $\geq$ 2000 deliveries as well as to examine the capacity of these anesthesia departments to play a future role in knowledge transfer to smaller community, rural and rural remote hospitals. A total of eight physicians (Anesthesiologists n=5; Family Physician Anesthetists n=3) representing university-based obstetric Anesthesia teaching programmes (n=4) and key informants from Phase 1 and Phase 2 (low obstetric delivery volume) focus groups (n=4) participated in the final "Finding Solutions" focus group.

Maternity Anesthesia Providers in Context

1. Family Physician Anesthetists in Low Volume (<2000 deliveries per annum) Hospitals

Participants from low volume obstetric centres noted that anesthesia services in small, rural and rural remote hospitals are largely provided by Family Physician Anesthetists. They noted that the relatively low volume of surgical cases, lack of case complexity, and relatively low remuneration for such services did not attract specialist anesthesiologists to practice in their communities. Family Physician Anesthetists described their community health provider role as being "multi-taskers." In addition to anesthesia services, most also provided family physician services in other settings including local hospital emergency wards, office-based general practice and/or family physician obstetric services. They also emphasized that multiple sets of skills were necessary to maintain an acceptable level of income in small community and rural practice.

Family Physician Anesthetists identified a number of barriers to maternity anesthesia care including understaffing and the inability to provide dedicated anesthesia coverage on the Labour floor 24/7. Participants noted that low delivery volumes made it financially not feasible to provide dedicated daytime coverage to the maternity ward and that this resulted in the provision of labour analgesia being done "as possible" between surgical cases in the operating room. Small group size, frequent overnight coverage of both the operating room and maternity anesthesia services, coupled with regular operating room services the next day were noted as major limitations to their ability to provide epidural analgesia for labour after hours.

Family Physician Anesthetists also noted additional difficulties imposed by rural and small community practice and the hybrid nature of their medical role in the community. These barriers included often insurmountable difficulties in finding physicians to cover their multiple clinical responsibilities to permit attendance at continuing education meetings or to go on vacation. Most providers covered overnight call an average of every third to fourth night in addition to other clinical responsibilities including operating room coverage the next day and weekend service coverage. Some providers reported being the sole provider of anesthestic services for their communities for months without relief. Some departments of anesthesia in rural communities were comprised of a single Family Physician Anesthetist.

Concern was also voiced over the current lack of meaningful (practical) medical education and research needed to guide best maternity anesthesia practices in small and rural communities, the difficulties experienced in identifying and maintaining the linkages with larger hospitals needed to permit knowledge transfer related to "best practices," the need for linkages with those who could assist them to modify "best practices" from research in tertiary obstetric centres to provide safe and effective care in their resource-limited environments, and the need for linkages to be made with obstetric anesthesiologists in larger centres to provide a consultative role when needed. When asked questions related to a potential role for anesthesia extenders or nurse anesthetists in their practices all respondents noted that they could not see a clear role or cost-savings since extenders and nurse anesthetists would not solve the key issue of reducing their burden of over-night call coverage. The majority of Family Physician Anesthetists felt that their unique combination of skills was the "answer" to the severe physican/anesthesia service shortage in small and rural communities in Ontario. Many also felt that their small group size had left their important role in the community unrecognized and had left them without a professional "voice" within medicine.

2. Anesthesiologists Providing Maternity Anesthesia Care in High Volume (>2000 deliveries per annum) Hospitals

Anesthesia services in non-tertiary high volume (≥2000 deliveries per annum) were largely provided by specialist Anesthesiologists. Many of the issues and barriers to maternity service provision identified by Family Physician Anesthetists were also voiced by these physicians. These included understaffing and difficulties in providing dedicated anesthesia coverage on the Labour floor 24/7. These difficulties related in part to human

resources availability, issues with remuneration and a lower level of practitioner interest in obstetric anesthesia service provision. Heavy service demands in these hospitals variably limited departmental abilities to maintain continuing medical education. One centre had restricted department meetings to once per month (held mostly to address business issues with department education events held when possible after hours) in order to cope with heavy service demands. Others noted more regular educational rounds.

Overall, large community practitioners were more able to access obstetric anesthesia experts in tertiary centres for knowledge transfer than anesthesia providers in smaller centres. Barriers to attendance at continuing medical education issues were also less prominent in large community hospitals than in small and rural centres. In addition, while large community hospitals were closer in proximity to smaller centres than tertiary obstetric centres and voiced a willingness to provide knowledge transfer and skills updates to physicians in smaller centres, they appear to lack the human resources and infra-structures required to initiate and sustain such an endeavour at this time.

Focus Group Findings: Key Barriers to Maternity Anesthesia Service Provision & Potential Solutions

Several key themes and factors emerged from the analysis of Phase 1 and 2 focus groups that reflect multiple interacting "systems issues" that create barriers to provision of accessible, high quality maternity anesthesia care in non- tertiary obstetric programmes.

These include:

- Disparities in women's access to maternity anesthesia services across Ontario hospitals.
- Barriers to the provision of "best practice"maternity anesthesia care
- The need for interdisciplinary maternity team education/training programmes to permit changes and improvements in services to occur.
- Medico-legal issues in the provision of obstetric anesthesia services to patients without involvement of a primary care physician; and,

While the factors contributing to barriers to service provision clearly impact at several levels, these have been separated, for the purposes of this discussion, under one major theme, and are illustrated below. Supporting quotations are designated by the originating hospital type. The barriers and issues presented in each theme are followed by solutions proposed by physician participants.

Theme I. Disparities in Access to Maternity Anesthesia Services and Contributing Factors

Multiple factors contribute to existing disparities in women's access to maternity anesthesia care in Ontario. These disparities are clearly evident between University teaching hospitals, where women wait an average of 30 minutes or less for a labour

epidural to small community and rural hospitals in Ontario where they wait an average of 4-6 hours for pain relief or may find that they do not have access to such services at all. Factors contributing to disparities in access include: the shortage of human resources resulting from inadequate numbers of new anesthesia trainees, issues with recruitment and retention of existing providers; issues with provision of 24/7 "on call" coverage of maternity services while covering other anesthesia emergency services, and issues with remuneration for maternity anesthesia services coverage.

While these issues were voiced by physician respondents providing obstetric anesthesia care in both large and small community hospitals, they were found to be most acute in small community(<2000 deliveries per year) and rural programmes (self identified as rural and having < 1000 deliveries per year). The overall provincial maternity anesthesia services situation was summarized thusly by one Family Physician Anesthetist,

"…and so we've got a two-tiered [maternity anesthesia] system that needs to be fixed and these (investigators) need to tell the Ministry that …so we can set up a program to try and fix it…."

Therefore, while this report provides information related to issues and barriers to maternity anesthesia care in both large and low volume community obstetric programmes, it is focused largely on the issues found in small and rural community anesthesia programmes and their potential solutions. The interactions of these factors to produce limitations in womens' choices and their ability to access maternity anesthesia services are illustrated below.

1.Patient Expectations and the Effect of the Anesthesia Shortage on Women's Access to High Quality Pain Relief in Labour in Hospitals with <2000 deliveries per annum

Community Maternity Anesthesia providers described the disconnect between patient expectations and the reality of labour analgesia service provision in their hospitals. Physicians described their need to prioritize competing service demands and the difficulties in doing so.

"Their [patients'] expectations are that epidural anesthesia… [is] provided 24 hours a day basically on demand…. There are some individuals who come and say, "You know I want an epidural" to the registration clerk. So they are priming the pump and being very directive in their care." [Small community]

"I believe that most [women] that come through our institution are coming from our own practitioners… and they probably would have had some degree of discussion about the reality of us being available or not. We are not always available to come at the drop of a hat because we do not have [anesthesia] staff attending to the obstetrical floor … we have someone on call who may be involved in many other things…and you triage at any point in time where you're going to be able to provide your service… you try to give an appropriate time…when you'll be able to attend to something like an epidural… so that they can transfer that information to the patient to keep their expectations

realistic…there's always some discussion [with the obstetrician] of how important [the epidural] is."[Small community]

"So women who want an epidural as soon as they come in, generally speaking, make the choice of going to the city. And women who stay here for the most part [primiparous patients] are not expecting epidurals." [Small community]

"We've got about 750 deliveries a year and I'm the only person doing epidurals, aside from a few … locums who come and maybe do about 2 to 3 days of call a month… so they'll call me and we'll try to use our epidurals judiciously. ..we can't have an "on demand service." [Small community]

"We offer it [an epidural over] 24 hours at [institution]…. But it's unofficial…I'm the epidural service with the backup of 3 others [Family Physician Anesthetists] who do take their turns but I'm usually available." [Small community]

"We just had one of the 4 [Family Physician Anesthetists] say that [they're] leaving… already we're talking about well, that that means we won't be doing 24 hour [coverage] anymore." [Small community]

"…we have an unusual situation. We share [call coverage] with [another institution] and it's ½ hour away. So when the [staff at the other hospital is] on call for the OR, which is every second night, I tend not to be available for epidurals. .. I do sort of one in 2 calls (overnight service coverage) for epidurals. And they can try me. I might be around on those "off" nights." [Small community]

"…there's always the discussion of how important it [an epidural] is and when the timing of the call is and so on…we do not appreciate it if they're [obstetric coverage] calling us from their home in bed and saying you know please come in and do an epidural. Most of them stay in house and most of them will do that assessment and then call us." [Small Community]

"I think it's important if I'm going to triage my time, if I have more than one thing on my plate… I'm asking them to sell me this patient…You treat all of them the same, but it is important when you're making a decision to know how their labour has been, where they're at, what the risk factors are…I think those pieces of information are very useful to us managing our time because we can't like a lot of the places I suspect we're talking to today, provide someone to sit in the [delivery suite] … for even part of the day let alone the whole day." [Small Community]

"…But we can't attract someone to sit and do 3 or 4 epidurals a day and do a section or two. That's just not going to pay it. We're doing you know 13-1400 births, 40% epidural rate, 20,25% C-section rate, you know it works out to be 2 epidurals, you might get them all 6 in one day but it's still going to happen infrequently enough that you can't make enough money." [Small Community]

"We don't do a lot of epidurals. They [nursing staff and obstetricians] realize that if I was in there every day doing an epidural, I…just wouldn't have a life." [Rural]

2.*Maternity Anesthesia Services have Lower Priority in the System than Non-emergency Operating Room Anesthesia Services*

Only one larger community hospital had an Anesthesiologist designated solely to the maternity care unit during regular working hours and only one larger community hospital had an Anesthesiologist dedicated primarily to obstetric coverage 24hours per day. The rest of the participants (large, small and rural community hospitals) shared that in their hospitals maternity care anesthesia services, outside of emergency and booked cesarean sections were often given lower priority than the anesthesia needs of the operating room. This was particularly the case in small and rural hospitals where women receiving epidural analgesia waited 4-6 hours on average or simply could not be cared for due to competing hospital service needs, the onerous on call schedule or lack of skilled providers. Epidural rates ranged from 5% to 35% in small and rural hospitals to 60-80% in large community hospitals, the latter rates being similar to those found in large tertiary obstetric centres in Ontario. Average epidural wait times in large community hospitals were estimated from 30minutes to one hour, also similar to those found in tertiary obstetric centres (average wait time 30minutes or less). Factors contributing to difficulties in maintaining maternity anesthesia services are illustrated below with the most significant barriers found in under-resourced small and rural communities.

"We basically…do call for 24hours. You do an elective [surgical] list during the day—you [cover] whatever [service needs that have to] interrupt that list and then go on [working] throughout the day and night." [Small community]

"If I'm in the OR, it [the labour epidural] has to be done when I can get around to it." [Small community]

"The OR's usually pretty busy and if you have to tell the surgeon I have to go up and sometimes even do an epidural, because you got some momentum going with one surgeon and you want to get through the [operating room cases]. They can get somewhat nasty about it. There've been times when you feel like you're being pulled both directions."[Large Community]

If I'm in the OR it has to be done when I can get around to it. After hours, we take call from home so I'll happily come in in the evening for an appropriate case....I also kind of have a standing order ,that they shouldn't call me, that the physician will call me only if it's an extreme case, say after midnight…I think those are just survival rules." [Small community]

3.*Reimbursement Issues and Maternity Anesthesia Coverage in Low delivery Volume Hospitals*

"It's these smaller communities, smaller than myself and we're bad enough, but the

smaller ones where they actually have to factor in income from 24 hour coverage and get it you know 150 and 200 dollars[for coming in in the middle of the night for an epidural', lose your sleep, put themselves, compromise the next day, die of heart attacks sooner and everything else for 150 bucks." [Small Community]

"..most, if not the entire billing manual is based I think on urban experience and I think the way that we provide epidurals in rural areas is a little bit different…[including the] fact that we're usually called in from home [to provide a labour epidural]".[Small Community]

4. The Effect of Local Hospital Culture on Patient Access to High Quality Pain Relief in Labour

Local hospital culture also played a variable but important role in determining if and when the Anesthesiogist/Anesthetist would be contacted following a patient request for labour pain relief, when that request would be met and the level of quality of the options offered.

- ***The Lower Appeal of Maternity Anesthesia as a Practice***

"I hear this time and time again when I'm trying to hire people: I want to slow down so I'd like to come to your hospital…. .we have some people that really don't like to do obstetrics but continue to do it because they know that there's nobody out there that would be willing to take on a preponderance of that practice." [Large community hospital]

" No one, no one has expressed an interest in taking on a larger share of obstetrical anesthesia…. [Large Community]

- ***Other Professional Decision-making and its Impact on Access to Labour Epidurals***

"…as soon as they arrive to the birthing unit, they're assessed by the obstetrician. And the obstetrician always writes down epidural prn[when requested]. So basically it comes right down to the nurse. There are some nurses who are very pro-epidural and then there are others who are not. And you can always tell, judging by who's on on a typical night for example, whether you're going to have like a busy night or a quiet night [for epidurals]. So basically it comes down to the nurses just like I think probably in most hospitals." [Large Community]

"It's on a scale of 0-10 it's [hospital culture] probably around a 7 or 8 in favour of epidurals. I mean there's always these other factors that prevent you from being there on the spot when the nurse and the patient agree that an epidural is the most appropriate course of action. I mean we're busy in the operating room… And that varies. And then

there are you know the, some residual prevailing nursing attitudes. And maybe even some attitudes on the part of the anesthetists as well." [Large Community]

"…some of the people in our department are very, I guess very protective of their income. So they will not call anybody else [to perform the epidural if they are busy]. They will have the patient wait. And I would have to say that's probably about like 5 or 10%. Most of the people have no problem whatsoever to just go ahead and call [for another person to help out]."[Large Community]

- ***Cultural Barriers to Practice Change and Access to High Quality Labour Analgesia***

"No we have some young members as well. You know they tend to get entrenched in the culture…I've been trying for years to get PCEA {patient controlled epidural analgesia—walking type epidurals) in our hospital. We've, tried a couple of times to try, to convince the members of the department at large that this is probably the way to go. And … they said no we want to go in, put the epidural in, make sure it's working and never see the patient again." [Large Community]

."Some people are more educated than others. Some maintain their CME more than others do…there's a bell curve there of education. There's a bell curve there of demographics and age and interest in adopting new techniques." [Large Community]

"I think the problem is that you might be preaching to the converted, meaning some people who are keen on adopting new techniques or be willing to take the time off or to make the trip and that kind of thing. And the people who are resistant and just want to stick with the old way'll probably tend to decline [the option to learn]."

Theme 1. Proposed Solutions to Lack of Access to High Quality Labour Analgesia from Key Stakeholders

The most immediate and important barriers to Maternity Anesthesia Service provision were demonstrated in small and rural community hospitals suffering from chronic and worsening human resources shortages. The need to address these issues simultaneously using multiple strategies is illustrated by the responses below:

I. Addressing Human Resource Issues to Improve Patient Access

1. Optimize Maternity Anesthesia Services Provision by Currently Trained Family Physician Anesthetists

- ***The Need for Provincial Maternity Anesthesia Networks to Support Existing Family Physician Anesthesia Services & Support Skills Updating/Retraining of***

Existing Staff in Small & Rural Communities

" My impression over 20 years is that people would get their year of [Family Physician] anesthesia training and a certain number would drop out after a year or two 'cause they realize this is a little more stressful than what they're prepared to deal with. But after that first year or 2, people tend to drop out or at least question their abilities, after they've had a really tough case or maybe a couple of tough cases in a year. And usually they're related to pediatrics and obstetrics 'cause you know how quickly those things can frighten you. So that's I think the reason that people give up doing it.…in times of bad obstetric outcomes, that shakes a person quite a bit. And it takes a very strong person to shake that off and carry on." [Rural provider]

"… in rural practice, it seems like there are a fair number of places where people are not doing epidurals. I know in one place the [who] person wasn't doing [them] hadn't had the training I think. Do you think there would be … a role for…making available for those people a place where they could come in, it's a protected environment so they could get their skills up and they might have confidence?" [Small Community Provider]

"… I think that's a good idea [opening up places where re-training and updating skills are possible] because that's salvaging people who you're going to lose maybe from … anesthesia. So and that would always [need to] be a … one-on-one situation where they could come to be a bigger center and be supported and taught and encouraged." [Small Community Provider]

- ***The Need to Grade Under-serviced Remuneration to Attract Existing Family Physician Anesthetists to Locations with Greatest Service Needs***

"My only concern is I'm at (hospital in under-serviced area) and probably taking (physicians providing anesthesia) away from places like Smith Falls and Sioux Lookout [when recruiting]. Because I am an hour from Toronto, just like [X hospital] and we get [recruit] them (physicians providing anesthesia) first before the others do. And that's unfortunate for them." [Small community]

"This under-serviced area thing became quite an issue… when the under-serviced area program came out … the places that were under-serviced were you know [remote rural location] and you know [remote rural location]. Well it worked and we were able to utilize it to help us get people. Well now when the under-serviced area program calls [small community hospital] under-serviced and we're on par with them for support, the levels of support that are being provided, it ain't working anymore. So, as you see me working more and more hours every year it gets worse and worse, because of that phenomenon. [Rural]

2. Developing New Family Physician Anesthetist Resources for Maternity Anesthesia Care

- ***The Need to Make Changes to Current Policies and Funding for Family Physicians Wishing Re-entrant Anesthesia Training***

"One thing that the government might want to do, and again it is robbing Peter to pay Paul but at least it's do-able because Paul and Peter are the same, is if they put some sort of **reasonable** re-entrant program for GP's to do anesthesia. And by that I mean it's like, bite the bullet, find someone, pay them a [reasonable] salary for that year, because… nobody out there in practice today can afford to go back [for training]. If you've got a family and mortgage and everything… it's not an option. You can't afford to go back to do a year on a resident's salary. I mean I couldn't." [Rural]

"That's the way we've trained our people here is that we send them back on the residency salary and we pull together money in the community and prop up their salary so they've got a real salary to go away in." [Small Community]

- ***The Need to Increase the Numbers of Family Physicians Choosing Family Physician Anesthesia Training & to Increase the Attractiveness of Family Physician Anesthesia as a Profession***

"My first community was [rural community]. I was up there for 8 years and we went from 9 people doing anesthesia to 3. At [my current small community hospital, we've experienced the] same thing. We went from 6 staff to now where we've got 2 full-time[staff] and a handful of locums."

"I think the difference between emerg [emergency ward family medicine] and [Family Physician] anesthesia is the remuneration. You can just do emerg and that's probably the best financial decision for somebody just starting out. …compare that to doing just anesthesia where you have to do call on top of it….Anesthesia is not nearly as inviting."

"….we have had people. They've come up for a year or 2 and now one's off on maternity [leave]. There's always a situation, it's kind of slow turn-over."[Rural provider]

"…[as a profession] we [Family Physician Anesthetists] have no voice." [Small Community]

3. The Need to Optimize Training Assessments of Foreign Trained Anesthesiologists

"… there are lots of process issues that really need to be addressed, whether this report just identifies the sort of the horrific state of analgesia … for ladies in labour in rural settings and says it like that, enough to force a re-think of College licensing practices or provincial bodies assessing training. …every international medical grad has a story about how the Royal College hasn't even gotten to their application. These are fully-trained, foreign-trained anesthesiologists that I'm sure would be you know interested in any kind of solution we have to get them into clinical service…. So I think there has to be pressure. It's an opportunity to have this Panel [OMCEP] consider you know lobbying other national licensing bodies or provincial licensing bodies to be creative. I know we all want to have standards of health care and practice and I don't think we would be lowering our standards. I just I think we need to be more flexible and we just don't seem to have it in our bureaucracy." [Tertiary Maternity Anesthesia Provider- Finding Solutions Focus Group]

4. Perspectives on Alternate Anesthesia Providers

Focus group participants discussed the feasibility and utility of training alternate anesthesia providers in order to solve the anesthesia human resources shortage. Many physicians in large community and teaching hospitals saw a role for respiratory therapists and/or registered nurses as anesthesia extenders. These positions were always described within the context of direct supervision by an Anesthesiologist.

Physician anesthesia providers in small and rural community hospitals, however, did not see an important role for alternate anesthesia providers in their communities. Family physician anesthetists saw their profession as the most appropriate alternative anesthesia provider group for small and rural communities since they were able to serve other health care needs including medical coverage of emergency wards, family practice obstetrics and provide office-based family practice services in addition to coverage of hospital-based anesthesia services. They noted that neither nurse anesthetists nor RTs would reduce the onerous numbers of 24 hour service coverage required of them since these alternate anesthesia providers could not cover anesthesia night call services alone. They also felt that nurse and RT alternate providers would be unlikely to come to their communities, would be expensive and might cause "turf issues".

The summary of findings regarding alternate anesthesia providers outlined above are reflected in the quotes below.

- ***Large Community and Teaching Hospital Anesthesiologist's Views of Alternate Anesthesia Providers***

"Well I mean any IV anesthetic care, sedation, monitoring, we now have our RTs [Respiratory Therapists] doing. So now they're covered by somebody in house. But you know they are very skilled individuals and a lot of the acute resuscitative interventions, so they are particularly useful group in the case of, you know if you gave a narcotic and it was a bit too much, well this is an individual who knows how to do a bag and a mask.

And can be taught about Narcan [narcotic reversal agent] and everything. They may not be a nurse but they can certainly learn .. limited pharmacology. [Tertiary Maternity Anesthesia Provider- Finding Solutions Focus Group]

"At the retreat that the Ontario anesthetists had, when they mentioned nurse anesthetists, it was booed out of the room. So there's a tremendous attitudinal bias against nurse anesthetists in particular. And for those of us that have been in anesthesia for awhile, we you know, we've all heard of the American model and in some places nurse anesthetists down there work very well and others they don't." [Tertiary Maternity Anesthesia Provider- Finding Solutions Focus Group]

"To me, I was a GP anesthetist for about 5 years, and to me it seems sort of silly to set up a separate group, certainly in the rural areas when you already have the GP anesthetists who are the best resource I think. And I think training more GP anesthetists would probably be the answer." [Anesthesiologist in a Large Community Hospital]

- ***Small and Rural Community Providers***

"My view is that there is already …an alternative group… the family practice anesthetists. And it would seem like until we've maxed out that potential, to develop a third stream [of anesthesia providers] … doesn't seem sensible to me. And it [Family Practice Anesthesia] seems …like a very long term [solution]… so I don't see a real need for it personally … the other [non-anesthesia providers] will cause of turf issues in the future." [Small Community Anesthesia Provider]

"Well I think that's the issue.…I mean all anesthetists are treated as technicians in the sense that you know come in and do this epidural, come in and do this sedation for person in emerg, whatever it is. And it's sort of forgotten that … there are medical issues underlying all those [issues]. And I guess the assumption is that you need to …have some experience and [medical] background to deal with the problems, and their co-morbidities or the problems that occur as a result of whatever actions you took, to be able to deal with them in a way that a technician wouldn't have the breadth of experience or training to deal with." [Small Community Anesthesia Provider]

"But the bottom line is anesthesia is anesthesia. And even if you're talking about the eye room [eye surgery cases], you know these are older people, they're going to be stressed and they're going to have pressure on their eyeballs and vagal responses [severe slowing of the heart rate (or pauses in the heart rate} and reductions in blood pressure implied] and things like that. … let's put it this way, when you have a fire, you want a fire extinguisher." [Rural Anesthesia Provider]

"I think the issue that "X" mentioned – that…someone like an …extender would have to have a broader skill set [**including being able to provide independent maternity anesthesia call coverage]** than just being able to do one thing in a rural setting [in order]

for this solution …to be really effective…."[Small Community Anesthesia Provider]

"It seems to me that the nursing crisis is worse than the physician crisis. And where are these bodies going to come from [for nurse anesthetists]?"[Rural Anesthesia Provider]

"So far my impression of people in those sorts of roles, it doesn't really work very well for the rural setting because you need a number of them to cover…to provide 24 hour coverage. And you can never attract them, there's always jobs in more attractive areas."[Small Community Anesthesia Provider]

"But the only way they're going to get anesthetic services is to either make us -- get us to work longer hours which – well good luck -- or somehow give us more assistants to take some of the things that we do that can be done by others away from us, IV being a primary example. [Small Community Anesthesia Provider]

"I think anesthesia assistants within the OR is a good thing as long as they're just assisting the anesthetist. One anesthetist for one person. I'm a firm believer of that. I think that will increase efficiency and in the same fashion, it may increase efficiency up in the obstetrics unit as well, [for example, having an anesthesia assistant] to set up the epidural pump." [Small Community Anesthesia Provider]

"I think efficiency wise, anesthesia assistants is a good thing but not doing these procedures as such."[Small Community Anesthesia Provider]

"I disagree that they're lesser expensive. Because if you're paying someone a salary, you're paying someone's pension, you're paying someone's malpractice insurance….I think that family physicians provide health care at a much more efficient and cheaper rate than some of the specialty sort of sub- sub-groups." [Small Community Anesthesia Provider]

"Well I think there are two issues in a rural setting. I mean one is the breadth of medical issues associated with the service you're providing and the other is that approach just hasn't worked in the rural areas. Now it's rare to find nurse practitioners in rural areas; it's rare to find midwifes and nurse practitioners, yet the whole raison d'etre was… to provide rural services… I don't know if it[the money spent on training these groups] was wasted in a sense that I mean the service is bring provided somewhere but it certainly hasn't reached the peripheral setting …. We'd love to have midwives here, we'd love to have more nurse practitioners. But we just can't attract them you know." [Rural Anesthesia Provider]

"Anesthesia's given by anesthetists. If someone other than an anesthetist can do it, then it's not anesthesia. I mean I hate to sound simplistic about it. I know who I, if I was getting an anesthetic [I'd want an anesthetist] doing it. If, you know X and Y get us anesthesia assistants, that might, that would, that might help. And by an assistant, I really mean like even something like you know, at our center if they funded one more nurse to just stuff an IV in everybody before they hit the OR, it would make us more efficient."

[Large Community Anesthesia Provider]

5. Alternative Strategies For Providing Access to Maternity Anesthesia Services

- ***Informing Patients About the Types of Maternity Anesthesia Services Available in Small and Rural Hospitals & Local Difficulties in Predicting their Availability***

"…I think if you said that every woman delivering in a particular area could find out what was available before it came time to deliver and then decide whether or not they were going to accept that, then I think that would be reasonable. And obviously it … may mean that you offer people the ability to move elsewhere to deliver." [Small Community]

"I think a woman has the right to know what's available if she's planning on delivering wherever she is and if she's not happy with it, I mean the next step is then the government has to decide whether or not they want to fund having her deliver elsewhere." [Small Community]

"Each rural location changes it's [epidural service] availability day to day, week to week, month to month and even in our hospital we can't readily predict how much epidural service is going to be available." [Small community provider]

- ***.Intravenous Patient Controlled [Narcotic] Analgesia as an Alternative to Epidurals for Labour***

Many community hospitals voiced interest in patient controlled intravenous narcotic analgesia (PCA) for labour as a "stop gap" measure for women waiting for epidurals. Some hospitals described having a similar practice known as nurse controlled intravenous analgesia already in place. One tertiary maternity anesthesia provider described the use of PCA, placing its role as an analgesic modality into perspective.

"…I worked in [western province] and that's [PCA] what was available in a lot of under-serviced] places and it is safe as long as, I think the biggest issue is defining your neonatal resuscitation team, because that has to be adequate. Being able to give mum Narcan [a narcotic reversal agent] and shake her and wake her, that…really doesn't, it doesn't end up being a huge problem. But it's a problem to ensure you've got adequate neonatal resuscitation support. And [you need to realize] …that this [PCA] is really a second rate level of analgesia compared to an epidural" [Tertiary provider]

Theme 2. Barriers to the provision of "best practice"maternity anesthesia care in hospitals with low delivery volumes

1. ***Anesthesia Shortage and the Inability to Attend Formal Continuing Medical Education Events***

- ***Shortage of Family Physician Anesthetists and Difficulty in Finding Coverage of their " Multi-tasker"Health Care Roles***

Family Physician Anesthetists described multiple, significant barriers that made it very difficult for them to leave their communities to attend CME events. These related to anesthesia shortages in their communities and the difficulty in finding others to cover their multiple physician roles.

> "In our facility there [are] 4 GP anesthetists 5 days a week with 2 ORs running each day, so most anesthetists alternate between 2 and 3 days a week [in the OR] and if you're taking time off, one of your colleagues has to cover … .As GP anesthetists most of us have a family practice or do emergency room work. … I think the biggest issue is there's only so many bodies to go around…. CME time is often at the bottom of the list, unfortunately… And it's just imposing on your colleagues when you [do]… who are already stressed for time themselves."
>
> "The other thing is in terms of us coming down to places is…[that] most of us are multi-tasking and doing a bazillion things. It's really hard to get away. …

- ***Market Pressures & the High Costs of Locum Coverage to Permit Time off for CME***

  Family Physician Anesthetists noted that human resource shortages had made acquiring locum anesthesia coverage very expensive, since they had no resources to supplement locum funding in order to attract them to their hospitals. These additional expenses had to be 'out of pocket' and were prohibitively expensive.

  > "The other money issue that I … wanted to… point out was as we're trying to get people to come up and … spell us off so we can go to a meeting, there's a new breed …of locum physician out there, who's very much cherry-picking… their opportunities. And there's a lot of places [hospitals] with you know mills and factories [hospitals with large operating room case volumes] that seem to be able to kind of up the ante a bit and this [new breed of locum]… who have their hand out and say show me the money and then we'll talk about me coming. And so it's very difficult to find people that want to come…. we as anesthetists in our community with an APP … basically have no support [for this extra cost]. And so to get people up here, it's it's I mean you know … we can do it but it costs us so much that at the end of the day you say what the heck did I do that for you know? That cost me ten thousand bucks to have this guy to come to in for a weekend you know. And it came out of my pocket right. So…it's very painful." [Rural provider]

2. ***The Need for Permanent Formalized Networks to Provide Maternity Anesthesia Knowledge Transfer***

Physicians providing community maternity anesthesia care described difficulties

ranging from those encountered when developing and implementing best practice protocols and the occasional need for "real time" maternity anesthesia consultations to the general lack of CME relevant to their practice needs. The degree and spectrum of difficulties described often correlated with institutional distances from university-based maternity anesthesia teaching hospitals. Obstetric anesthesia providers in distant hospitals in general (in both large and small/rural community hospitals) were less likely to have maintained significant contacts with experts in maternity anesthesia at university teaching hospitals than providers in hospitals in closer proximity to such centres.

- ***Lack of Access to Best Maternity Anesthesia Practice Protocols***

Family Physician Anesthetists and Anesthesiologists from community hospitals distant from tertiary maternity hospitals described the absence of formal linkages with maternity anesthesia teaching hospitals as a significant impediment to institution of best practice protocols in their hospitals. They noted that outside of sporadic transfers of such protocols from experts at CME events, they had no real mechanism of accessing new protocols and voiced the need for more formalized permanent networks of maternity anesthesia support.

> "We don't have a formal link with anybody. We're out in the middle of nowhere." [Rural provider]

> "What we find is we go out to a meeting or an interesting place and often there's a hands-on component, a simulator, maybe a day in the OB unit or OR, and often we'll pick up protocols from just that group of people and that relationship goes on for a month or two. And then it's basically over."

> "I think that getting protocols from other places is, especially if it's accompanied by a little bit of personal communication, is quite helpful when we're rural. And protocols alone that come out of the blue are probably ignored. Protocols that come with a little discussion…probably have a huge effect.

They also described the need to know if current maternity anesthesia practices in their institutions were consistent with the baseline standard of care expected. They noted that it was difficult to keep up with changes in maternity anesthesia practice without continuing contact and feedback from experts in centres of excellence. Participants noted that without continued access to maternity anesthesia advisors, particularly during the implementation phase, that new protocols even once acquired from the experts, were unlikely to result in adoption of "best practices" due to lack of additional supports.

> "We're just trying to implement PCEA ourselves and we had this discussion about a team of us, anesthetists, nurses, going to for example Toronto versus having someone come to us. …we felt that if we had one person, even if we didn't actually have an epidural running at that point,…come to us [here in our own hospital] who could do an in-service with all the nurses and all the anesthetists that would that would definitely be worth our while. I think from my perspective it would be easier to have someone come to our team rather than several of us going out. When the information is just coming back via one person, … it gets diluted a little bit. If everybody hears it first hand from the experienced providers, I think it's a little a little more useful."[Small community]

> "It's easy for me to get protocols but it's hard for me to get the rest of the team organized and get matching team teaching to do the things that I want to do you know. I can easily come home from a meeting with that protocol but the nurse educators, the pharmacy, everybody has more questions than I usually come home with. And that's the biggest stumbling block." [Rural provider]

Anesthesiologists from large community hospitals in closer proximity to university-based maternity anesthesia teaching programmes experienced different difficulties since most had maintained some degree of contact with teaching centres. They noted that their heavy clinical case loads, lack of infrastructure supports and lack of time made obtaining hospital committee approvals for new best practices protocols onerous and frustrating.

> "Every institution has been re-defining [protocols] again and again and again …if we add up all the professional hours spent re-writing protocols and re-formatting with different letterheads and thinking them through, it's a real waste of time. It would really be nice if there was a central process." [Large Community provider]

> "…the hardest part to get this whole thing started was just going through the dozens of committees just to try to get you know the paperwork going through pharmacy… and you know we are busy as well…the meetings are always around lunchtime. And I guess they figure that we've got nothing else to do at lunchtime even though I'm stuck in the OR… still so I've got to find somebody to watch my [anesthetized patient in the operating] room while I run down, just present either my …case, whatever it may be. And then run back up to my OR… So that's been the hardest part, just to get to all those committees because if I miss one committee, I have to wait the following month just to get through that committee before it goes on any further."[Large Community]

> "I think everybody …would agree that we've all sat down at meetings and heard somebody talk…and we've all sort of sat around the table and nodded, said 'gee that'd be a really good idea' and the thing dies on the table. Because there's just no time or …are no resources or there's no initiative or there's no help or whatever to make these ideas come to fruition." [Small Community provider]

Both large and small/rural community maternity anesthesia providers believed that more formal maternity anesthesia networks would help to facilitate improvements in practice.

> "Just a comment. I mean that's the kind of thing that if there was a network to provide [resources for protocols] … all that work has been done somewhere. If there's just some way to access that, you know, when we decide okay we want to bring some epi-morph, [or bring in] continuous infusion or PCEA (patient controlled epidural analgesia), we can just sort of contact somebody, get a package of information and…[just get it up and running]."

- ***The Need for Access to Maternity Anesthesia Experts for Consultative Advice***

While some community maternity anesthesia providers noted that they had maintained contact with their mentors after training, others voiced the need for a more formalized relationship with maternity anesthesia experts in teaching centres, particularly for management advice related to difficult obstetric cases.

> "I don't think you can ever get away from the phone call. Again if you have a specific linkage… I'm sure in the most of the teaching centers, they're 24 hour a day providers, so there is always somebody potentially at the end of a phone call. But it can't be for you know anything other than I think intrapartum emergencies."

> "…and it would be nice to be able to communicate it [the problem to an expert] at the time that it's happening." [Small Community]

- ***The Need for Flexible Models of CME Made Relevant to Community Practice Maternity Anesthesia Issues***

Small Community and Rural Participants reported that many formal Anesthesia CME venues did not meet their learning needs. They noted that they needed CME aimed at a very practical level and a venue in which to discuss difficult obstetric anesthesia cases with maternity anesthesia experts in form of rounds as part of ongoing CME.

> "I think that one of the key points is that rural type anesthesia is quite different from big city anesthesia. And a lot of the GP anesthetists would probably not find the tertiary care discussions completely very relevant to their day-to-day [information needs]. If there was some format for specific GP anesthesia rounds, that would be most helpful."

> **"**I think we need to have a very real-time process when these [clinical] problems come up [so that they don't] get forgotten or lost [for CME discussions]. …it's like somebody hasn't written down what …the problem was months ago and

nobody can quite remember …[why] there was a concern or interest in this area, you know.

"And I think that's you know the problem with identifying topics for you know for big CME events. You know my little situation here may be totally different than Bs in [rural community] or X's in [a small community hospital] or it may be similar. But specific issues like … how to set up PCA program or some other specific project like that… I think it's up to the individual situation and physician to identify their needs and if they have a contact person, then to sort out what mechanism is best suited to address those needs, whether it's a team visiting them or their team going down to their institution or just one [physician going] at a time, whatever. But I think it's going to vary with each institution, with each individual physician. But I think having those mechanisms [available] is what's the key issue."

Theme 2. Proposed Solutions to Lack of Access to both Formal CME Meetings, Knowledge and Skills Updating and Retraining

1. Develop a System to provide Locum Anesthesia Coverage for CME and Respite Relief

Small and rural community maternity anesthetists noted that locum physician services provided by the under-serviced area programme had worked in the past and had permitted them to leave their communities for CME, had provided "hands-on" CME by way of visiting locum professors to their communities and had permitted them to go on vacation. They voiced the need for re-institution of such a system or an alternative system to provide them with a source for anesthesia locum coverage.

"… we used to get support from the under-serviced area program where retired sort of professors in the city … would do a day or 2 together here … and share notes.… And that used to be set up through the under-serviced area program but it died a number of years ago. It was quite effective I thought. It was a creative way of solving both our need for locum coverage and it gave us … CME… and sharing of information." [Rural provider]

Another potential solution to the shortage of locum anesthesia service providers arose from the mixed provider "Finding Solutions" Focus Group. This related to the possibility of specific licensing of anesthesia fellows to work as locums in under-serviced areas as part of a pool of anesthesia providers providing relief to physicians in these areas. Existing sources of funding and potential sources of accommodation for locums in their communities were noted.

"…I was thinking if you had a system that …was a special system set up specifically to serve under-serviced areas that would allow them [anesthesia fellows and residents] to

work only in these circumstances, [so]they couldn't necessarily just go down the street [and work in their own cities]. The only way they could do it [work independently for a fee would be in] a sense going into some kind of you know human resource pool that was designed for under-serviced areas only. …then it's either choose that [type of work] and get the advantage of the experience and some income. But they don't get to go work in downtown Toronto or Markham. They've got to go wherever [whatever under-serviced area that needed them] and they would." [Tertiary provider]

"… I think most remote places that are used to having locums have accommodations pre-arranged in some form. Either they take over the person's house or they have some other alternative already established. And there is funding already available for that kind of thing through the OMA. Not at a high rate but I mean there's X number of days per full-time physicians that, whether it's a specialist or a family physician to cover it with. The issue with residents, like [fifth] year anesthesia residents or fellows doing it is the licensing." [Small Community Provider]

2. Develop Formal Permanent Geographic University-based Anesthesia Networks to Facilitate Knowledge Transfer between Maternity Anesthesia Experts and Community Maternity Anesthesia Providers

Maternity Anesthesia Providers described the need for formal anesthesia networks linking large, small, rural and rural remote hospitals to a university-based centre of maternity anesthesia excellence. Two to three networks provincial networks were envisioned, dividing the province into geographic pies with each network originating from a single university-anesthesia programme office intimately linked with maternity anesthesia experts in a tertiary obstetric centre. These geographically-based networks were envisioned as the infrastructure across which information could be transferred. Networks were envisioned as dynamic, capable of providing continued information and practice updates with the human resources required to not only to develop best practice protocols but also to conduct the research studies needed to continually improve these practices. The university-based centre of maternity anesthesia excellence would also need to be capable of providing practical interdisciplinary team training for protocol implementation in community hospitals (on site in the community hospital or on location in centre of excellence/teaching hospital) as well as serve as a protected clinical teaching environment where those wishing for retraining in maternity anesthesia skills or skills updates could pursue such training.

"I think we have to go to the Ministry of Health and say …we need program funding to provide this [anesthesia] networking service to bring the provincial bar of maternal services up … to a certain level you know." [Small community provider]

"I think they [the links between non-tertiary and tertiary centres] have to be initially formalized. Because that's the problem, we've all been relying on a friend who we went to med school with who turned up to be an FRCPC anesthesiologist somewhere or wherever. And then when those people move on who you knew, then …you know then

the link goes. So I think it almost has to be institutionally based or region based." [Small Community provider]

"I see the universities having one designated staff person with a special interest in community [maternity anesthesia] …and that person would be … a resource for any potential problems, like the residents go to the staff who's most interested in regional, too, that person could also run weekly … problem rounds by teleconference for example for the whole catchment area. And so that there's an ongoing link so the anesthetist who had a bad case can talk about it …. And again an ongoing link like that. …there could be a once a year visit, or once every two years even, to those communities…if there was one designated resource with some funding for that and if there was a well-established follow-through on on-going education that people could expect, I think that that would be a very good way of going about it. And there could be more to the program but I see that as an essential part."

" I think that it [knowledge translation maternity anesthesia networks] would be probably better institutionally-linked and that the group at that institution buys-in so that there's ownership amongst a group of [anesthesia providers] …cause it is much easier that way so …we kind of divide geographically and become linked to whatever communities [are designated to us]. I mean I think the key is not to burden the system, whatever system gets developed don't overwhelm it to begin with, you want to set it up for success." [tertiary hospital provider]

"I feel that obstetrics is much more organized than we [anesthesia] are. And I'll give you a few examples. I see instance this outreach program that some of our colleagues at [tertiary centre] have for obstetrics. They spend once a week you know in other places trying to take care of patients and work with somebody else in a teaching role."

Conversations between Tertiary and Small Community or Rural Providers

Conversation #1: "Is there any idea if [non tertiary providers] would be willing to come for a short time of service ships or fellowships and if we could get funding for them. And then they could take the skills from the university hospital and bring it back to their community." [Tertiary Centre provider]

"That's a really great idea because especially when you want to pick up a particular skill like PCEA… which we're considering now. And I know that if I can spend 3 or 4 days watching people do it,that would be very very helpful. And you always learn better by doing it with somebody.[Small community]

"Would you lose money though if you came? Is there any funding available for you?" [Tertiary provider]

"No at this point in time … It would have to be a voluntary effort on my part to go pick up a particular skill." [Small community provider]

Theme 3. The need for interdisciplinary maternity team education/training to facilitate improvements in maternity anesthesia services.

Many participants in both large and small/rural community hospitals shared that continuing medical education which provided only current protocols and [didactic] education was limited and even ineffective in helping maternity anesthesia providers institute best practices in maternity anesthesia. They shared that they often had difficulty obtaining resources, education and training for other team members such as nurses and pharmacists who were important to the implementation of new best practices and that this was a significant impediment to change.

"It's very difficult when you're, when you're just starting out or you just come to a new hospital and you, you come here and you think you want to change the world. And then you realize that the status quo is very rigid and sometimes difficult to change." [Large community provider]

"I find when I'm off at meetings and I bring back ideas and I'm trying to sell them, the part that's hardest to get together is the nursing education package. And if you could please, while you're doing this, the nursing educators at the same website put together the nursing side of it, in parallel with it. And that would be just a huge benefit for us in the periphery. Just huge."

"I've been off at various meetings and picked up new ideas, I often have no trouble getting the PCA protocol from someone like you. But then when I say alright now about the nursing package? I often get referred on to this you know this nurse who's not really very interested in talking to me. And then I go to some more trouble and I try and set it up so my nurse calls them . And so far we've never had a successful link with a nursing." [Small community]

"… once we got the Nurse Educator on our side (related to Patient Controlled Epidural Analgesia), then it became much easier because the other nurses really just had to start performing." [Large Community]

"Our workload is phenomenal, our resources are strapped, we're always broke. So the reality of taking our budget and sending a nursing team down to Sunnybrook to learn how to do something, it will not happen." [Rural provider]

"But yeah the nursing part of it, getting the in-service and everything was the biggest part, and if that were available in parallel on that program that would be great. If the program would sponsor, like would pay for someone who set this up

in hospital A no matter what size, actually it's even better if hospital A in some ways is not the teaching center but is someone more comparable to our hospital. If the program would pay for that person to come over and do in-services and all that and explain the ins and outs, that would be great."[Rural]

"And if you had a package that just isn't aimed at physicians but maybe included pharmacists and nursing staff in your recommendations or in your commendations, and uh I think that would really help us a lot." [Small Community]

"Pharmacy, pharmacy likes to put up barriers for any new drugs. ..I can't just say I'd like some epi-morph. I have to prove, provide evidence and go to a few meetings and push for it." [Small Community]

"There's a bell curve there of demographics and age and interest in adopting new techniques. You bring people out to talk to the department and maybe half the department will show up or maybe you have it as a dinner time session and some people say well I'm not going to go to any of those cause it's not convenient to me, I want to go home and spend time with my family. So there are a lot of issues around just the education of it." [Large community provider]

"It's not just the education, it's the follow-through. I think someone else alluded to this when I think they said that they you know spent the next 5 months in meetings just to ram the protocol through. …and you can't guarantee success unless people are educated. You can go and tell people that you're going to do something and they'll get upset with you. You have to come with a presentation that offers the evidence and you have to build up a sense in them that they understand and that they've been intellectually stimulated by it. And that, that's where the motivation comes. Once you've got the motivation, you've still got a long way to go with establishing protocols and the shifting sands of the of the hospital bureaucracy. I mean, I think if we were to get help with anything it would be someone that that could be an executive assistant to the anesthesia department, to do all the things that they wanted, that spoke "hospitalese" so that the anesthetist could get back to work and all of this stuff went on." [Large Community Provider]

"We introduced the PCEA (Patient Controlled Epidural Analgesia--walking type epidurals) about 4 or 5 months ago. But there is a lot of reluctance among our colleagues as well as the nurses too to do the PCEA. That is because of lack education or lack of knowledge about the PCEA.[Large Community Provider]

"Yeah but it's it's all a matter of time you know. Basically you know when you work in an anesthesia department and you're fee-for-service, there is no time, there's very little leeway, there isn't much lateral shift. …My question to you is

when are we going to have time to sit down and do all this? As a group collectively…, I meet with my department once a month for an hour and a half that's it (context: most academic centres have weekly CME rounds for one hour per week). So you know it's pretty valuable time. So we took away to CME for that [service provision]. We have our CME at other times that are a little less convenient and therefore attendance is a little less. But we're very busy." [Large Community Provider]

Theme 4. Medico-legal issues in the provision of obstetric anesthesia services to patients without involvement of a primary care physician

- ***Midwifery, Anesthesia and Medico-legal Responsibilities***

The level of comfort with midwifery care differed by the level of supports available within hospitals. Those with more obstetric support and more anesthesia resources (ie large volume obstetrics, large community hospitals) expressed fewer concerns than those in small and rural communities where significant issues were voiced related to medico-legal responsibilities. Differences in the perspectives of those practicing in these different environments are illustrated below.

"So in their general obstetric care, I think, these midwives I don't know so well. And … I'm just not comfortable with their skills. My physician colleagues I have [been] a little bit more comfortable with [Midwifery care] that if everything's going fine….I always ask for a physician [covering obstetric care] to be consulted, just, mostly to protect me medico-legally if there's something I'm missing. I don't do obstetrics so, I just..... If there's a bad medico-legal outcome, I know that the epidural probably won't be the cause but I don't want to be the only MD that can get a finger pointed at me."[Small Community]

"Once you are the only physician looking after the patient for whatever reason[ie even if only for a labour epidural], you know I think you're the most responsible physician for all areas of care...I think the midwives need to be supervised by their peers and you don't want to get into a situation where the anesthetist is giving obstetrical advice."[Small Community]

"If there was, just generally if there was some sort of policy statement that but…. I guess there can't be because there's no protecting me medico- legally. If something goes wrong and the patient decides to point their finger at me, the anesthetist who's being involved just a little bit versus the midwife who they've become essentially friends with, I don't think there's any way to protect me from that. If there was a general consensus that I would not take on any obstetrical responsibility, that would make me more comfortable. But I don't think there's any way of making that happen." [Small Community]

"Up until recently the nurses were called if a midwife requested an epidural. Then they would communicate with us directly. We had sort of a gentleman's agreement with the obstetricians that if we had inserted an epidural and there were untoward problems, which is rare, that they would assist us and intervene. And actually it's gone quite well. The nurses have educated the midwives in terms of what's required for you know insertion and maintenance of an epidural. And of course the midwives have risen to the challenge quite readily and it's working fine." [Large Community]

"… we do have set up with the midwife group, a protocol…, cause they actually, they don't have a nurse in the room often, because, so that we had to …come up with a protocol of how they would monitor the epidural. So we've gotten quite comfortable with their capabilities of doing that."[Large Community]

Summary of Findings

This study was conducted to explore issues and barriers to maternity anesthesia care in non-tertiary obstetric hospitals in Ontario. While we report on practices spanning the spectrum of maternity anesthesia service available (from university-based maternity anesthesia teaching hospitals to rural remote hospitals), the report's focus was predominantly on issues found in small community, rural and rural remote hospitals providing obstetric anesthesia care and potential solutions to those issues.

Maternity anesthesia care in non-tertiary Ontario hospitals is currently provided by both specialist Anesthesiologists and Family Physician Anesthetists. The latter profession represents physicians with dual qualifications in both family medicine and anesthesia. While large community hospitals were usually staffed by specialist anesthesiologists, anesthesia services in smaller and more remote hospitals were usually staffed by Family Physician Anesthetists. To be successful, health policies developed to improve maternity anesthesia care should take into account important differences in the scopes of practice provided by both professions as well as distinct differences in the nature of the issues imposed by practice locations (small/rural versus large community).

Family Physician Anesthetists provided multiple and diverse types of health services to their communities including anesthesia, emergency ward coverage, family physician obstetrics and general office-based practices. Small and rural community anesthesia practice required coverage of relatively low case volumes distributed over large numbers of hours (24/7) by few Family Physician Anesthetists. Respondents noted the current significant and growing shortage of Family Physician Anesthetists in small and rural communities in Ontario and their increasing difficulty in recruiting those few available to more distant small community and rural practices. This shortage, coupled with the absence of funding for a designated provider to cover maternity anesthesia services provision during daytime hours, has led to difficulty in covering maternity anesthesia services both during the day (due to competing priorities in the operating room) and at night (due to the onerous numbers of 24 hour "on calls" required of staff to maintain service provision and competing priorities in the operating room). Labour epidural rates in small community and rural hospitals were lower (ranging from 5-35%) than those

found in large community hospitals with longer wait times of 4-6 hours for those women who were able to receive the service. Some women did not have access to these services at all. Remuneration for overnight coverage of anesthesia services varied between institutions and was not seen as equitable.

Low numbers of anesthesia providers, difficulties in finding locum anesthesia coverage and the associated expenses (including the need to "top up locum fees out of pocket") made it difficult for Family Physician Anesthetists to attend formal CME events. While some described continuing availability of maternity anesthesia mentorship at university-based centres, others did not have such access and described the need for more formal permanent maternity anesthesia networks to provide them with best practice protocols, interdisciplinary team training and the continuing supports required to implement these best practices. It was believed that such networking would also be capable of providing them with ready access to maternity anesthesia consultation with experts, opportunities for skills updating in centres of excellence and provision of CME made more relevant to their specific practice needs.

Low case volumes led to the need for Family Physician Anesthetists to be "multi-taskers" in order to maintain an income. Most Family Physician Anesthetists saw no role for alternate anesthesia providers in their setting since RTs (respiratory therapists) and nurses would not be able to cover operating room and maternity anesthesia services independently, might cause turf issues and would be an expensive solution because of their limited utility. Family Physician Anesthetists saw their profession as the answer to health services shortages in small community and rural Ontario. They voiced the need for increased training of Family Physician Anesthetists (requiring one additional year beyond Family Medicine training) and changes to re-entrant Family Physician programmes to encourage existing community physicians to obtain training in Anesthesia. They also spoke of their need to have their profession more formally recognized and given a voice. They believed that additional incentives needed to be created to increase the appeal of Family Physician Anesthesia as a profession as well as attracting them to practice in small and rural community hospitals in general. One key point was the noted need for graded underserviced remuneration to attract existing Family Physician Anesthetists to the most needy areas of the province.

By comparison, large community anesthesia departments were characterized by more complex and heavy anesthesia service loads. While there were more anesthesia staff to cover night calls difficulties were still encountered covering maternity anesthesia services due to competing needs in the operating room. Some hospitals reported dedicated daytime obstetric coverage. One hospital noted 24/7 obstetric coverage similar to that found in tertiary obstetric centres. Epidural rates in large community hospitals (60-80%) were similar to those found in tertiary institutions with slightly longer wait times (30minutes to one hour versus 30minutes respectively). Heavy clinical responsibilities led to varying degrees of difficulty in maintaining departmental CME. Most most large community hospitals in closer proximity to university-based maternity anesthesia teaching centres continued to maintain informal linkages to maternity experts in those centres. This was not the case in larger community hospitals distant from university-

based centres of maternity anesthesia excellence. Like Family Physician Anesthetists, large community anesthesia providers also voiced the need for more formal links to university-based centres of maternity anesthesia excellence to permit more efficient knowledge transfer. Alternate anesthesia providers, given a role as anesthesia service extenders under direct supervision of an anesthesiologist, were seen as having a potential role by some large community anesthesia providers.

All groups of physicians providing maternity anesthesia services exhibited a clear, sincere desire to provide care based on best practices. They also voiced their interest in participating in the future work required to provide solutions. All believed that formal permanent university-based maternity anesthesia networks, once established would facilitate knowledge transfer between centres of excellence and provincial maternity hospitals, providing a mechanism for stabilization and rejuvenation of small programmes in the present and the necessary infrastructures to support continued growth and high quality maternity care in the future.

The Intent of Study Recommendations

Recommendations are presented firstly, in the context of an over-arching vision for the supports and infrastructures required to integrate all essential maternity care services as well as their coordinate their function and provide ongoing monitoring of health service quality in Ontario. Specific recommendations follow which address, in particular, the issues and barriers to maternity anesthesia service provision identified in hospitals with low volume deliveries (<2000 per annum) in this study .These recommendations reflect the findings of the entire study as well as incorporating recommendations of the mixed physician group participating in the final "Finding Solutions" focus group. They are divided into:

1) short term recommendations, intended for immediate implementation to take pressure off of existing services and support educational renewal while longer term strategies take effect; and,

2) mid- term recommendations, intended to provide the necessary infra-structures required to support development and continued renewal of human resources and maintenance of best maternity anesthesia practices in the near future.

Recommendations

1. Creation of a Ministry of Health and Long Term Care Maternity Care Branch responsible for setting provincial maternity care standards, integration of existing maternity care services, human resources planning and surveillance of health outcomes. Anesthesiology should be included amongst the key stakeholder groups and represented by both specialist Anesthesiologists and Family Physician Anesthetists due to fundamental differences in their scopes of practice and the spectrum of issues imposed by various practice settings across the Province.

2. Improve women's access to obstetrical anesthesia services in smaller non-tertiary maternity care centres.

***Short Term Recommendations*:**

Intent: To improve retention of existing anesthesia providers and support continued maintenance of existing obstetrical anesthesia services in non-tertiary obstetric centres.

- Provide graded levels of under-serviced remuneration by geographic location to attract providers to less attractive under-serviced locations.
- Provide specific additional financial incentives tied to anesthetic maternity care provided between midnight and 8am in low volume centres.
- Implement equitable payment models for maternity anesthesia services (eg between permanent staff and locum staff) across all low volume centres.
- Develop and fund the human resources networks required to facilitate respite relief for physician continuing medical education and vacation in under-serviced areas (ie advertising and recruitment of locums).

Mid-t*erm Recommendations*

Intent: To increase the number of Family Physician Anesthetists available to meet service needs in smaller non-tertiary obstetric centres.

Training New Family Physician Anesthetists

- Establish **dedicated funding** for one year anesthesia training positions within University Departments of Anesthesia for Family Physicians as part of the postgraduate level 3 year of residency training. The number of positions funded should be based on both existing and projected human resource shortages. Funding could be re-instituted for this program and recruitment begun within 12months.

- Develop strategies to promote recruitment of Family Practice residents into Family Practice Anesthesia Fellowships (PGY 3 year).

Re-entrant Anesthesia Training

- Facilitate re-entry of established Family Physicians into one-year, University-based Anesthesia teaching programmes with dedicated funding, including provision of additional supplemental funding above that currently supplied since loss of practice income is an important barrier to re-entrant training.

- Provide clear and transparent remuneration contracts for those wishing to re-enter training in Family Physician Anesthetist programmes. This should include an ***a priori*** contractual agreement between the Province and the physician related to the specific location of employment required as part of the return of service agreement since many Family Physicians wish to ensure their ability to return to their own communities after training.

3. Facilitate the uptake and implementation of Best Practices in Obstetrical Anesthesia by the multidisciplinary team in non-tertiary maternity care centres.

- Establish permanent formal obstetrical anesthesia networks for knowledge translation between academic anesthesia providers in University tertiary obstetric centers and community providers across specified geographic areas within the Province. It is likely that two to three networks will be required. Each network will be best served if coordinated out of a single University Anesthesia office dedicated to developing linkages and facilitating knowledge transfer between tertiary, large community, small community, rural and rural remote hospitals in a single geographic area. Infrastructure support and further study will be required to determine the most appropriate and efficient linkages. These networks should be integrated with existing and future networks developed by other members of interdisciplinary maternity care teams across the province.

- Formal knowledge translation networks will develop multiple strategies to disseminate best practices and support their implementation including research. These should include development and maintenance of web sites with "best practice protocols," telephone consultation and educational rounds between hospital physicians and between physicians and interdisciplinary teams, the ability to provide on-site interdisciplinary obstetrical anesthesia education in under-serviced areas where providers experience major barriers to attending off site CME and the potential for interdisciplinary team training at tertiary obstetric centres when possible.

- Provision of hospital infrastructure supports to facilitate the uptake of best practices, including education for the multidisciplinary teams involved in the

care of maternity patients receiving anesthesia services (eg. nurses, pharmacists, midwives).

4. Clarification of medical and legal responsibilities of anesthesiologists and family physician anesthetists when they are the sole physicians involved in patient care of midwifery patients. "**Who is the most responsible physician?"**

- Obtain clear guidelines from the College of Physicians and Surgeons of Ontario and the Ontario College of Midwives regarding the scope of responsibility of physicians providing anesthesia to women under the sole care of midwives.
- Obtain guidelines clarifying the legal responsibilities of physicians providing anesthesia services to women under the sole care of midwives from the Canadian Medical Protective Association.

5. Establish a formal organization to represent family physician anesthetists.

- Recommend that the Ontario Medical Association or Ontario College of Family Physicians promote and support the formation of a permanent group within its organization to represent the issues and needs of family physician anesthetists.

Reference List

Altheide, D. L. (1987). Ethnographic content analysis. *Qualitative Sociology*: 65-77.

Brown, G. (2005). Family Medicine anesthesia. Sustaining an essential service. *Canadian Family Physician*, 51, 538.

Byrick R.J. et. el. (2002). A physician workforce planning model applied to Canadian anesthesiology: assessment of needs. Can J Anaesth.49(7):663-70.

Engin, D.A. et al. (2005). A demand-based assessment of the Canadian anesthesia workforce - 2002 through 2007.*Canadian Journal of Anaesthesia* .52(1):18-25.

Leininger, M. M. (1985). *Qualitative Research Methods in Nursing*. Orlando, Fla: Grune & Stratton.

Marshall, C.& Rossman, G.B. (1995). *Designing Qualitative Research*. 2nd ed. ed. Thousand Oakes:CA: Sage.

Miles, M. B. & Huberman, B. (1994). *Qualitative Data Analysis*. second edition ed. Thousand Oakes, London: Sage..

Morgan, D. L. (1993).Qualitative content analysis: A guide to paths not taken. *Qualitative Health Research* p. 112-21.

OMCEP (2005). [Ontario Maternity Care Expert Panel Hospital Survey]. Ontario Women's Health Council. Unpublished Raw Data.

Patton, M. Q.(1990). *Qualitative Evaluation and Research Methods*. 2nd ed. Newbury Park, CA: Sage, 1990.

PPPESO (2005a). Perinatal services in Ontario. How are we doing? http://www.pppeso.on.ca/english/Ontario%20Perinatal%20Report%20PDF%202005.pdf. Retrieved Sept. 5. 2005.

PPPESO(2005b). Statistical Report 2004. http://www.pppeso.on.ca/english/Annual%20Report%2004-05%20English%20FINAL%2025Apr05.pdf, Retrieved Sept. 2005.

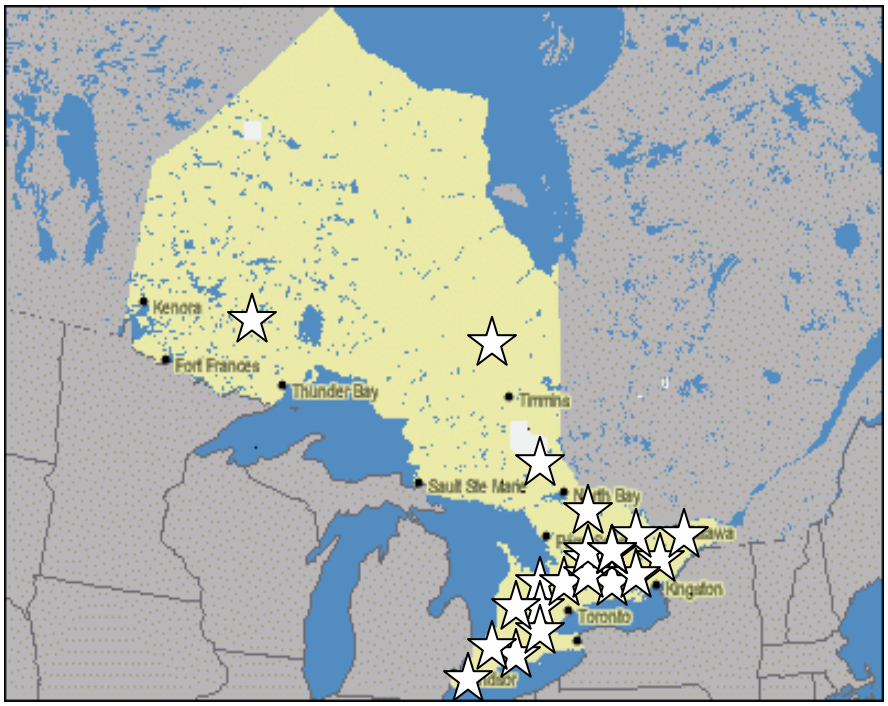
Polit, D. F., C. T. Beck, & Hungler, B. (2005). *Essentials of Nursing Research: Methods, Appraisals and Utilization*. 5th ed. Philadelphia: Lippincott.

Sandelowski, M. (2000). Whatever Happened to Qualitative Description? *Research in Nursing and Health* 23 (2000): 334-40.

APPENDICES

FIGURES

Figure 1. Geographic Map of Hospitals Represented by Survey Physician Respondents (n=24 hospitals)



Source: Ontario Ministry of Natural Resources

Maternity Anesthesia Practice Survey

Table 1. Characteristics of Survey Respondents (n=28) and Their Primary Hospitals of Employment

Age (n=27) Mean (SD) [minimum-maximum]	44.7 (7.9); [32-63years]
Gender (n=28)	Female 7/28 (25%) Male 21/28(75%)
Designation (n=28)	Anesthesiologist 17/28(61%) Family Physician Anesthetist 11/28(39%)
Years in practice since training completed Mean (SD) [Minimum-Maximum] (n=28)	10.7 (6.2); [2-25]
Total number of hospitals in which the participant works on a regular basis (1 day or more per week) (n=27)	1 hospital only 23/27(85%) 2 hospitals 3/27(11%) 3 hospitals 1/27 (4%)
Geographic Areas of the 24 Different Ontario Hospitals Represented by (n=28) respondents	Hamilton Waterloo: 4/24 Kingston Ottawa & Near North: 3/24 North West: 1/24 GTA Near North: 3/24 GTA: 6/24 North East:2/24 London Windsor & Near North: 5/24
Community type served by Primary Hospital of Employment (n=24)	Urban 5/24 (21 %) Large Community 8/24 (33%) Small Community 6/24 (25%) Small Community Rural or Rural 5/24 (21%)

Table 2. Survey Results from Maternity Anesthesia Providers in Hospitals with <2000 deliveries per annum (n= 14)

Respondent training	Anesthesiologist 4/14 (28.6%) Family Physician Anesthetist 10/14 (71.4%)
Age in Years: Mean (SD)	44.8 (7.5) [32-56]
Gender	Male 12/14 (85.7%) Female 2/14 (14.3%)
Years in practice since training completed Mean (SD), [Minimum-Maximum] (n=14)	13.9 (8.7), [2-30]
Respondent years in practice since training completion (n=14)	<5 years : 3/14 (21.4%) 5-9years: 3/14 (21.4%) ≥10 <20 years: 3/14(21.4%) ≥20 years: 5/14 (36%)
Total number of hospitals worked at on a regular basis (l or more days per week)?	1 12/14 (85.7%) 2 2/14 (14.3%)
Total number of anesthesia providers in the primary hospital of employment (excluding locums working less than l day per week): Median [Interquartile range]	Median 4 providers; Interquartile range [3-5.25]
Frequency breakdown of responses related to number of physician anesthesia providers in departments of Anesthesia	Frequency Percent ≤2 providers 2/14 (14.3%) 3 to 4 providers 5/14 (35.7%) 5 to 6 providers 3/14 (21.4%) >6 providers 2/14 (14.3%)
Estimated Hospital Labour Epidural Rates per annum	Range 5%-35%
Average estimated epidural wait time for women requesting an epidural (who actually receive one)	4-6hours
University Affiliated?	Yes 5/ 14 (36 %)

Table 3. Survey Results from Maternity Anesthesia Providers in Ontario hospitals with ≥2000 deliveries per annum (n= 10)

Respondent training	Anesthesiologist : 10/10 (100%) Family Physician Anesthetist: 0/14(0%)
Age in Years: Mean (SD) [Minimum-Maximum]	44.4 (7.6) [35-53]
Gender	Female 3/10 (30%) Male 7/10 (70%)
Years in practice since training completed. Mean (SD), [Minimum-Maximum]	13.4 (8.4), [3-25]
Years in practice since training completion	<5 years : 2/10 (20.0%) 5-9years: 4/10 (40%) ≥10 <20 years: 1/10 (10%) ≥20 years: 4/10 (40%)
Total number of hospitals worked at on a regular basis (l or more days per week)? (n=9)	1 8/9 (89%) 2 1/9 (11%)
Total number of anesthesia providers in the primary hospital of employment (excluding locums working less than l day per week): Median [Interquartile range] (n=9)	20 providers [14.5-23.5] Frequency Percent <10 providers 0/10 (0%) 10-20 providers 5/10 (50%) ≥21 providers 5/10 (50%)
Estimated Hospital Labour Epidural rates per annum	Non-tertiary: 70% (60-80%) Tertiary: 70% (67.5-70%)
Estimated Average Epidural Wait Time	Non-tertiary: 30- 1 hour Tertiary: 30minutes (<30minutes to 30minutes)
University Affiliated?	Yes 7/10 (70%)

Table 4. Methods Used to Provide Anesthesia for Elective Cesarean Section in their Primary Hospital of Work (n=24 Ontario Hospitals)

Number of deliveries per annum	Spinal	Epidural	Combined Spinal Epidural	General Anesthesia
<2000 (n=14)	Median 95%; 25th & 75th percentiles [87.5-98.0]; Minimum-Maximum: [40-100%]	Median 1.5%; 25th & 75th percentiles; [0.0-5.75] Minimum-Maximum [0-20%]	Median 0%; 25th & 75th percentiles [0-0.0] Minimum-Maximum [0.0-56%]	Median 2%, 25th & 75th percentiles [1- 5]; Minimum – Maximum [1-5%]
≥2000 non-tertiary obstetric centres (n=4)	Median 94%; 25th & 75th percentiles [92.3, 97.3]; Minimum – Maximum [92-98%]	Median 4%; 25th & 75th percentiles [1, 5.5]; Minimum – Maximum [0- 6%]	Median 0%; 25th & 75th percentiles [0, 0.75] Minimum – Maximum [0-1%]	Median 1.5% 25th & 75th percentiles [1-2.75] Minimum-Maximum [1-3%]
≥2000 tertiary obstetric centres (n=5)	Median 90% 25th & 75th percentiles [77.5,93.5] Minimum – Maximum [75-95]	Median 2% 25th & 75th percentiles [0.5, 7.5] Minimum-Maximum [0-10]	Median 3% 25th & 75th percentiles [0.5, 11.5] Minimum-Maximum [0-18]	Median 4.5% 25th & 75th percentiles [2.5, 7] Minimum-Maximum [2-9]

Focus Groups

Table 5. Characteristics of Focus Group Participants (n=24) representing 21 Different Ontario Hospitals

Age Mean (SD)	43.8years (7.2)
Gender	Female 5/24 (20.8%) Male 19/24 (79.2%)
Designation	Anesthesiologist 14/24 (58.3%) Family Physician Anesthetist 10/24 (41.7%)
Year training completed Mean (SD)	13.7 (8.4)
Total number of hospitals in which the participant works on a regular basis (1 day or more per week) (n=23)	1 hospital only 20/24 (87%) 2 hospitals 2/24 (8.7%) 3 hospitals 1/24 (4.3%)
Number of hospitals represented by geographic location in Ontario (n=21 different hospitals)	Hamilton Waterloo: 4/21 Kingston Ottawa & Near North: 2/21 North West: 1/21 GTA Near North: 3/21 GTA: 5/21 North East:2/21 London Windsor & Near North: 4/21
Description of primary hospital location	Urban 3/21 (14 %) Large Community 8/21(38%) Small Community 5/21 (24%) Small Community Rural or Rural 5/21 (24%)

Ontario Maternity Care Expert Panel

Appendix E

Improving Maternity Care in Ontario: Measuring Performance in a Maternity Care System

Why is an Evaluation Framework Needed for Maternity Care?

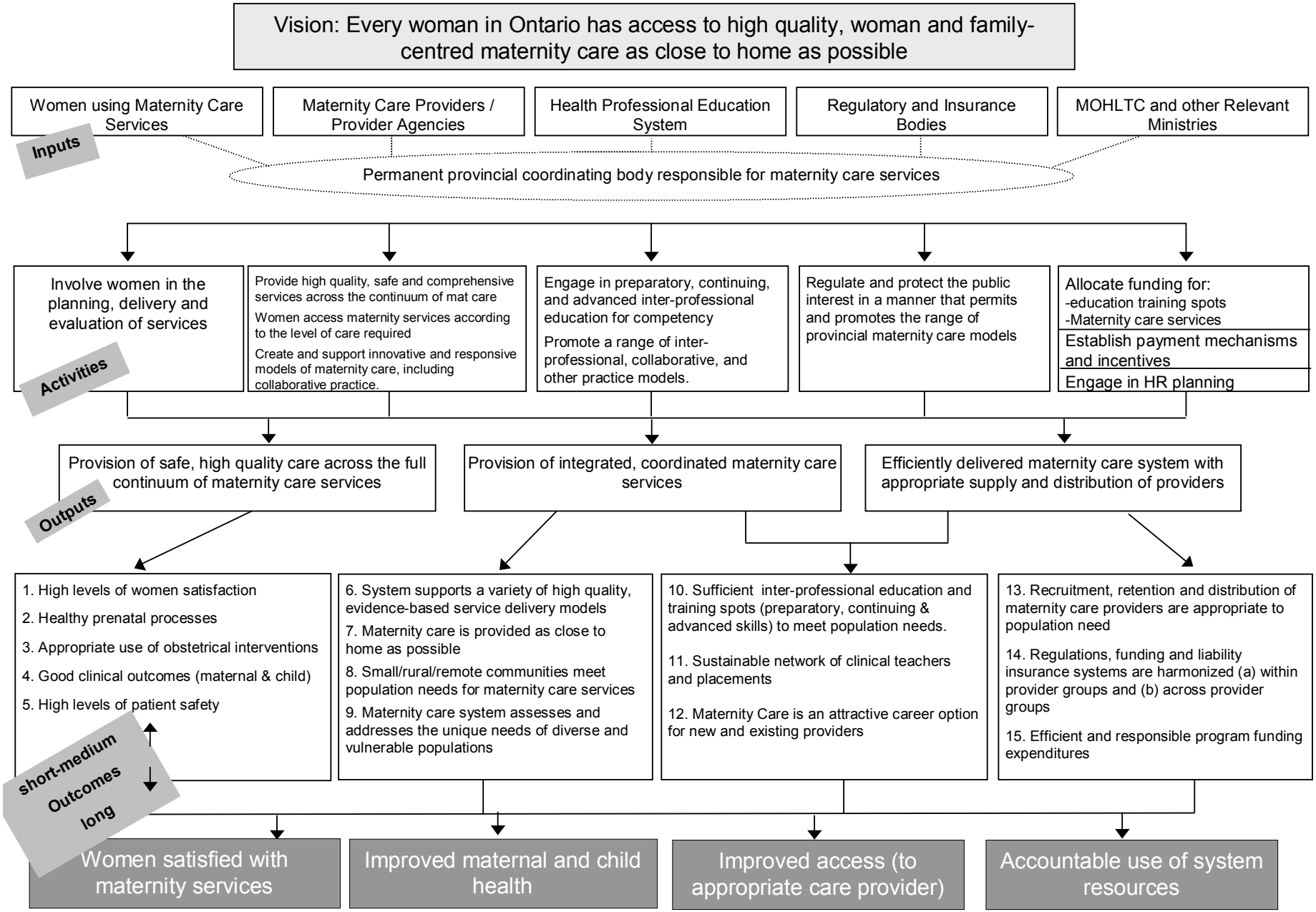
Evaluation is necessary in order to understand whether a program is progressing towards achieving its goals. Quantitative and qualitative measures or indicators are often used in this process of evaluation. Based on OMCEP's scan of existing indicators in the area of maternity care, we propose a set of performance measures that might be used to monitor and evaluate Ontario's maternity care system on an on-going basis and provide feedback as to whether the system is meeting its objectives. Consistent with the OMCEP's vision for maternity care, the proposed indicators reflect the entire continuum of maternity care from pre-pregnancy counselling through to postpartum care.

For Government to implement and rely on a maternity care strategy, it is imperative for the system to focus on improvements to maternity care monitoring and evaluation for a sustained period to accumulate sufficient data for trend analysis

Program Logic Model

Identification of a meaningful set of performance indicators first requires knowledge of a program's goals as well as consideration of the steps or processes involved in achieving program objectives. Program logic models are often used to ensure performance indicators are consistent with and reflective of program goals. Logic models that are used in program evaluation use an outcome approach and (1) provide a visual roadmap of what a program does and why, (2) demonstrate the intended linkages and relationships within a program, (3) display links between specific program activities and their outcomes, and (4) provide a basis for developing indicators that can be used to demonstrate how a program is performing.

OMCEP developed the attached Program Logic Model as the basis for an evaluation plan for Ontario maternity care. We recommend that it be used to confirm an ongoing evaluation plan for the maternity care system in Ontario.


Vision: Every woman in Ontario has access to high quality, woman and family-centred maternity care as close to home as possible
Women using Maternity Care Services
Maternity Care Providers / Provider Agencies
Health Professional Education System
Regulatory and Insurance Bodies
MOHLTC and other Relevant Ministries
Inputs
Permanent provincial coordinating body responsible for maternity care services
Involve women in the planning, delivery and evaluation of services
Provide high quality, safe and comprehensive services across the continuum of mat care
Women access maternity services according to the level of care required
Create and support innovative and responsive models of maternity care, including collaborative practice.
Engage in preparatory, continuing, and advanced inter-professional education for competency
Promote a range of inter-professional, collaborative, and other practice models.
Regulate and protect the public interest in a manner that permits and promotes the range of provincial maternity care models
Allocate funding for:
-education training spots
-Maternity care services
Establish payment mechanisms and incentives
Engage in HR planning
Activities
Provision of safe, high quality care across the full continuum of maternity care services
Provision of integrated, coordinated maternity care services
Efficiently delivered maternity care system with appropriate supply and distribution of providers
Outputs
1. High levels of women satisfaction
2. Healthy prenatal processes
3. Appropriate use of obstetrical interventions
4. Good clinical outcomes (maternal & child)
5. High levels of patient safety
6. System supports a variety of high quality, evidence-based service delivery models
7. Maternity care is provided as close to home as possible
8. Small/rural/remote communities meet population needs for maternity care services
9. Maternity care system assesses and addresses the unique needs of diverse and vulnerable populations
10. Sufficient inter-professional education and training spots (preparatory, continuing & advanced skills) to meet population needs.
11. Sustainable network of clinical teachers and placements
12. Maternity Care is an attractive career option for new and existing providers
13. Recruitment, retention and distribution of maternity care providers are appropriate to population need
14. Regulations, funding and liability insurance systems are harmonized (a) within provider groups and (b) across provider groups
15. Efficient and responsible program funding expenditures
short-medium
Outcomes
long
Women satisfied with maternity services
Improved maternal and child health
Improved access (to appropriate care provider)
Accountable use of system resources

What Does a Logic Model Tell Us?

The logic model starts with the Program vision that "Every woman in Ontario has access to high quality, woman and family- centred maternity care as close to home as possible". Next the inputs to the program are defined including women receiving maternity care services, providers and provider agencies, the health professional education system, regulatory and insurance bodies, and the relevant government ministries. The logic model then outlines the activities that the program engages in and the outputs (reflecting the size or scope of the services delivered or provided by the program).

Finally, a series of specific and measurable outcomes are identified reflecting changes in attitudes, behaviours, knowledge, skills, etc that are expected to result from program activities. Short-medium term outcomes are within the control of the program and are expected to occur with 1-4 years. Long-term outcomes reflect more fundamental changes in communities or systems occurring within 5-10 years that cannot be solely attributed to the program. Accordingly, short-medium term outcomes drive the selection of performance indicators, as they are more appropriate for monitoring whether the program is achieving its objectives.

Characteristics of Performance Indicators

Performance indicators can provide information on system inputs (e.g. supply of maternity care providers), processes (e.g. vacuum delivery rates or percentage of women with a first trimester visit) and outcomes (morbidity and mortality, patient or provider satisfaction). Performance indicators can also reflect different levels of the system. For instance, patient satisfaction can be measured and reported at the hospital level or at the system level (The NRC+Picker instrument is designed to do the former and the Maternity Experiences Survey administered by Statistics Canada is designed to do the latter). Other indicators may be most appropriately measured at the LHIN or Regional Perinatal Partnership level (e.g. supply of maternity care providers). The Ontario Hospital Report Project, which presents performance indicators for several areas of Ontario's health system, uses similar principles of scientific soundness, feasibility, and relevance for the indicators it presents.

Good performance indicators are:

- Clear and understandable
- Actionable – the data provide direction for change and information needed to make decisions
- Valid and Reliable – it measures what it is intended to measure and the measure is repeatable over time
- Cost effective – the benefit of collecting the data outweighs the cost of data collection
- Timely – the data can be collected, processed and distributed within a useful timeframe

The Need for Clarity of Purpose for Performance Measurement

It has been suggested that there are "three faces" of performance measurement: measurement for improvement, measurement for accountability and measurement for research (Solberg et al., 1997). Solberg and colleagues draw attention to the fact that there are different audiences for each of these purposes, each with different data needs and, for each of these three purposes, the type of measure, degree of rigor required, and reporting methods are different and sometimes conflicting. For instance, providers want outcomes data on the technical aspects of quality and they expect these data to be subjected to complex risk-adjustment procedures; consumers, however, have difficulty understanding these data and, instead, state preferences for data on satisfaction and access to care. Eddy (1998) argues that trying to use a measure that was designed with one thing in mind for something else simply does not work. He discusses several factors that affect how good a performance measure is and he highlights the fact that attention must be paid to the purpose, the entity being measured (hospitals, physicians, health plans), the dimension, and who will use it.

Care needs to be taken to ensure that performance indicators generated to monitor progress toward achieving the objectives of Ontario's maternity care system are used appropriately. It should be recognized that performance indicators, which are collected and used for accountability purposes may undermine any coexisting improvement aims that hospitals, providers, LHINs, or Regional Perinatal Programs may have in mind. The reason for this is that "Accountability data are intended to be non-confidential. They are intended to be used for judgment. The generation and reporting of these data will commonly result in fear and defensiveness" (Solberg et al., 1997: 142). Others have noted that: "there remains a difficulty of developing a framework for public reporting that can heighten acceptance of the measures for improvement activity rather than produce a defensive response or participants' denial of the validity of the measures" (Rogers & Smith, 1999: 251). Any evaluation initiatives stemming from the work of this panel need to consider these potential tensions.

Proposed Indicators for Evaluating a Redesigned Maternity Care System in Ontario

Based on the process undertaken by OMCEP and the indicator and data sources described in here in this appendix, one to four indicators have been identified for each of the 16 short-medium outcomes identified in the program logic model.

These indicators reflect desired inputs; processes and outcomes of a redesigned maternity care system for Ontario. Although some of these indicators can be measured at the hospital level or provider group level, most are appropriate for regional or system-level measurement and could therefore be used by the proposed Regional Perinatal Partnerships and the Office of Maternal Newborn Health. Details regarding the status of the suggested indicators (e.g. whether there are existing indicators or existing data that could be used to construct these indicators), the source, the level at which the indicator could be measured, and brief notes to guide measurement in these areas can be found in the next sections of this appendix.

BOX **1**

1. High levels of women satisfaction
    - Percentage of respondents reporting they were able to get the provider type (MW, OB, FP) they wanted
    - Satisfaction with access to Care
    - Satisfaction with Information, Education, Communication about Infant

2. Healthy prenatal processes
    - Adequacy of prenatal care (APNCU Index)
    - Percentage of women with a first trimester visit
    - Smoking during pregnancy
    - Percentage of women taking folic acid while trying to become pregnant

3. Obstetrical Outcomes
    - Perinatal mortality and morbidity
    - Trauma to the Perineum
    - Rate of episiotomy
    - Percentage of all c-sections done under general anaesthetic

4. Clinical outcomes (maternal & child)
    - Incidence of low birth weight
    - Patient reports of information and postnatal screening for depression
    - Identification and treatment of mental health problems pre- and postpartum

4b. High levels of patient safety
    - Patient perception of patient Safety
    - Percentage of births that result in maternal transfer due to lack of physician or nurse coverage
    - Adverse Events - Maternal and Infant

5. Regulations that support new Maternity Care models
    - Proportion of communities where midwives are able to practice to their full scope
    - Proportion of hospitals with restrictions on midwifery scope or number of midwives

6. Collaborative and other new practice models
    - Percentage of midwifery consults required only by physician protocol
    - Percentage of hospitals with midwife / physician shared call networks

7. Interprofessional and other education and training programs (preparatory, continuing, and advanced skills)

- Percentage of education and training programs with interprofessional maternity care modules
- Percentage of hospitals without 24/7 anaesthesia with a plan for obtaining advanced anaesthesia skills for FPs

8. Expansion and support for clinical teachers and placements
    - Percentage of rural and community clinical teachers with access to continuing professional education and teaching skills (learning to teach)

9. Maternity care providers, birth setting, and location is appropriate for risk status
    - Percentage of high-risk newborns born in the appropriate high-risk setting
    - Percentage of cases transferred out of maternity care region
    - Percentage of low risk deliveries taking place in birthing centres
    - Percentage of low risk deliveries taking place in tertiary care centres
    - Percentage of low risk deliveries attended by FP, MW and OB
    - Percentage of women receiving most or all of their prenatal care from a midwife or nurse practitioner

10. Maternity care system with harmonized funding (a) within provider groups and (b) across provider groups
    - Trends in the number of payment schemes within provider groups
    - Attitudes toward dominant or emerging payment models

11. Maternity care system assesses and addresses the unique needs of diverse and at-risk populations
    - Proportion of teens who smoked during pregnancy
    - Preterm birth rates and fetal growth (small and large for gestational age) among: 1) teens, (2) those with low SES, (3) women with low education, (4) aboriginals
    - Funding models that attract maternity care providers to diverse and at-risk populations

12. Training spots proportionate to population delivery risk levels
    - Percentage change in funded training positions in midwifery, FP-OB spots, FP-anaesthesia, perinatal nursing, & OBGYN
    - Percentage of hospitals that are clinical education sites for BScN nursing and RPN nursing maternity care rotations and Family medicine OB rotations, and midwifery

13. Maternity Care is an attractive career option for new and existing providers
    - Percentage change in # of FPs providing full continuum of maternity care
    - Percentage change in the number of maternity care providers (FP-OBs, Midwives, OB/GYNs)
    - Provider satisfaction: perceived quality of work-life, including sufficient coverage and time off
    - Provider satisfaction: Provider reports of plans to continue to provide maternity

care

14. Access to maternity care providers as close to home as possible
- Percentage of "women at increased risk and "women not at increased risk", who gave birth greater than a "reasonable distance" from their home community.
- Percentage of "women at increased risk and "women not at increased risk", who receive their prenatal greater than a "reasonable distance" from their home community.
- Percentage of small communities with hospitals receiving protected funding for maternity care

15. Small/rural/remote communities' are able to meet population needs for maternity care services
- Percentage of small communities with access to epidurals for elective pain relief in labour 24/7
- Percentage of patients in small, rural, remote communities with first trimester prenatal visit
- Percentage of small / rural / remote hospitals with maternity care as a stated service commitment from the hospital board
- Trends in number of births occurring in hospitals without obstetrical beds

16. System & Sustainability
- Cost of prenatal care under various provider models
- Unit cost per maternity, adjusted for market forces factors and case mix.
- Proportion of all maternity cases for which complete data are submitted to the proposed minimum data for maternity care
- Percentage of hospitals where 24/7 C-Sections are not available

Additional Indicator Areas for Consideration

Numerous indicators are already being collected by various perinatal databases in Ontario including discussion by the evaluation working group and consideration of existing and new sources for maternity care data yielded a list of other possible indicator areas for consideration.

Steps Necessary to Evaluate Ontario's Maternity Care System
1. Evaluating the Utility of Existing Data Sources

As noted, some of the data that would be required to construct a series of indicators to evaluate Ontario's Maternity Care System can be drawn from existing sources. While existing data can be an important and efficient source of information for constructing indicators, how useful the data are depends on whether the database (a) captures all the variables needed to calculate the indicator, (b) captures data for the population to be included in the indicators, (c) timeliness of the data and (d) the accuracy and completeness of the data in the database. Databases that do not contain all the necessary

variables but do capture a unique subject identifier may be able to be linked to other databases that do contain the missing information.

Our assessment of the utility of existing data sources for the evaluation and indicator measurement process is that despite the presence of several good data sources, there are important gaps in the available data on care, services, cost and experiences, data quality considerations persist for several NIDAY and OHIP variables, data from many existing sources are often 2-4 years old, and Ontario is presently limited in its ability to link data on cost, care and services, and experiences.

If we consider existing Maternity care databases in Ontario and examine what data are available regarding care and services provided for a typical maternity care patient several limitations become clear. If you consider the case of a woman cared for by a physician under a fee-for-service payment model, data on the number and timing of prenatal visits can be gleaned from OHIP billing data. These data will not provide any details about these encounters such as whether discussions of genetic screening took place or whether the woman was instructed to take folic acid. If the women saw a nurse practitioner during any of her encounters this would also not be apparent from the OHIP data. Data on certain procedures that are associated with physician billing could also be gleaned from OHIP data. Using the women's healthcare number as a unique patient identifier, data on certain aspects of intrapartum care and procedures captured in hospital discharge abstracts could be linked to this woman. Important data for the postpartum period related to coping and psychiatric well-being is unlikely to be captured in a manner that is detailed enough to measure such things as identification of or treatment for postpartum depression. Additional data on the prenatal and intrapartum period captured in Niday (if the hospital where the delivery occurs submits data to Niday) cannot be linked to this woman because no unique patient identifier is captured in Niday. In terms of the costs of care for this woman, accurate data on physician fees could be gleaned for this patient from the OHIP data; however no actual data are currently available reflecting the cost of her hospitalization. The Ontario Case Cost Initiative might in the future be able to provide cost data on a patient specific basis but capability in this area is currently very limited in Ontario.

If a physician cared for this same woman in an alternate payment plan, data on the true costs of physician services or services provided by other health professionals for prenatal and postpartum care would not be readily available. If this woman was cared for by a midwife, fees payable per course of care are available and could be linked to hospital discharge abstract data if the delivery took place in a hospital. This scenario reveals some of the limitations associated with using data for purposes other than those for which it was captured.

What about linking data on care, procedures, and cost to data on women's experiences with maternity care? Despite the fact that data on women's experiences with maternity care are currently or soon to be collected in two ways in Ontario, the current data systems do not allow us to link women's experience data with clinical encounter or cost data. Although the NRC+Picker Maternity Satisfaction Survey is conducted with women

identified from individual hospital patient databases, the health card number which is the unique patient identifier that could be used to link women's responses to other data on care and services they received, is not currently attached to the survey data. Statistics Canada is likely to take over the Maternity Experience survey initially developed and pilot tested by the Canadian Perinatal Surveillance System (Dzakpasu & Chalmers, 2005). When implemented these data will be collected from a sample of Ontarians (and other Canadians) that have given birth in a predefined period. Although Statistics Canada would likely have data identified by health card number, a smaller sample of women giving birth in Ontario will contribute data for this survey, thereby restricting the size of a linked dataset if it were created.

2. Creating New Data Sources

The advantages of creating new data sources for the purpose of evaluating Ontario's Maternity Care system have to do largely with being able to design data collection efforts to provide exactly the information from the specific population that is required for evaluation and indicator development purposes. Newly collected data also tend to be timelier than existing data that are collected for other purposes. The major drawback associated with creating new data sources is the resources (human and financial) that are required to collect the data.

To supplement the data on Maternity care and services in Ontario that already exist, it is the recommendation of this panel that additional data which reflects the perspectives of maternity care providers and those administering maternity care education at the college and university level in this province needs to be collected as part of any comprehensive initiative to evaluate Maternity Care in Ontario.

3. Maternity Care Provider Work-life Survey

Ad hoc initiatives to assess satisfaction, workload and work-life of maternity care providers (e.g. the current initiative through the Ontario College of Family Physicians) may provide the basis for instrument development for a Maternity Care Provider Work-life Survey that could be carried out on a recurring basis (bi-annual or every 5 years). Ideally, such a survey would target Maternity care providers in the nursing profession, midwives, family physicians providing prenatal care or obstetrics, GP anaesthetists, obstetricians, anaesthesiologists and paediatricians. The survey would be designed to collect data on satisfaction with payment models and incentives, satisfaction with the nature of the work they do, intention to continue or change current intensity of practice, appropriateness of incentives to care for various diverse and at-risk populations, perceptions of collaborative and other practice models, satisfaction with any new models of maternity care that are implemented and corresponding perceptions of legal protection, in addition to other potential areas. Data gleaned from this survey would be used to help construct performance indicators to assess various short-medium term outcomes on the program logic model such as Maternity Care is an attractive career option for new and existing providers (outcome 13), System & Sustainability (outcome 16), Collaborative and other new practice models (outcome 6).

4. Education & Training Program Director Survey.

In order to evaluate Ontario's Maternity Care system, data are required about several aspects of maternity education and training programs in the province. A recurring survey of the Directors of programs in nursing, midwifery, and medicine (undergraduate and postgraduate) would provide important information about supply and demand for maternity care providers, the presence of interdisciplinary modules and other initiatives, support for placements in rural and community settings, availability of training in advanced procedures, and other areas. Data gleaned from this survey would be used to help construct performance indicators to assess various short-medium term outcomes on the program logic model such as Interprofessional and other education and training programs (outcome 7), Expansion and support for clinical placements (outcome 8), and Maternity Care is an attractive career option for new and existing providers (outcome 13).

5. Hospital Survey

Two existing surveys designed to obtain data from hospitals on maternity care services have been devised, one as part of OMCEP's work (the Hospital Environmental Scan Survey) and one as part of the Province's Hospital Report Series to measure the performance of Ontario hospitals in a number of settings and clinical areas. One of these surveys could be used as the basis for ongoing assessment of hospital services and activities. Modifications or additions could be made to the Environment Scan Survey to collect data on the presence of shared midwife-physician call networks, maternity care as a stated service provision, the presence of protected maternity care funding, etc.

Managing the Data and Evaluation Processes

Evaluation of Ontario's Maternity Care system will require a substantial amount of attention and stable resources allocated to the on-going processes of data collection, analysis and information management, and maintenance of the evaluation system. However, steps are already underway by programs in the ministry and other programs affiliated with regional perinatal networks to substantially improve Ontario's current data and evaluation situation.

Data Collection.

In order to create a comprehensive set of performance indicators such as those proposed in this report, a variety of data collection processes are required. The system would need to become mandatory and routine data quality assurance tests would be required, at least in the initial stages of system development.

Processes for collection of survey data including questionnaire design and on-going instrument validation, obtaining and managing sample lists, questionnaire distribution, follow-up, data entry and analysis, would have to be put in place. Methodological support would be required to ensure sampling is adequate and processes are carried out in a manner that will maximize response rates. Given that three surveys are proposed (Maternity Care Providers, Hospitals, Education & Training program leaders) these processes can be quite costly and onerous. For instance, the job of obtaining sample lists

for the Maternity Care Provider Work-life Survey alone will require substantial liaising with the relevant colleges.

Analysis and Management through a Minimum Maternity Care Data Set

As more and more attention is being paid to the collection of data and its use in informing the decision making process, and as the Maternity Care framework is being put in place an opportunity exists to establish a platform for all data collection relating to Maternity Care in Ontario. A comprehensive framework to collect, validate, clean, report and analyze data should be implemented. This framework would enable the collection of relevant clinical, financial, and stakeholder data. Additionally, performance indicators could also be put in place. A robust reporting and analysis system would help various stakeholders to plan, monitor, evaluate and manage expenditures and outcomes. The Ontario Hospital Report Project has put a similar system in place, and the response from stakeholders has been very encouraging.

The proposed system would also be used to facilitate the collection of some of the data inputs from disparate sources (such as surveys, STATISTICS CANADA, other MOHLTC sources etc.). For instance, it would be ideal to have some sort of Maternity Care Minimum Data Set where data on all clinical encounters and case cost data were entered into one database at the point of care. Maternity Experience Survey data could be entered into the same system provided that women's health card number was used as the unique identifier on the Women's Experiences / Satisfaction Surveys.

Maintenance of the Evaluation System

Extensive and permanent resources would be required to collect and maintain this kind of data system. Consider that a full-time staff of 5-10 people may be required to collect data on an annual or bi-annual basis, carry out analysis, maintain and update a platform for province wide data entry of clinical and costing data, assess compliance and data quality, and disseminate / share information with multiple stakeholders.

How Maternity Care Data can be Used

The kind of comprehensive on-going evaluation recommended by this panel requires that a centralized body oversee the process. Accordingly, the ownership and ongoing management of the evaluation of Ontario's Maternity Care System, including management of the data and on-going performance measurement, must reside with the Office of Maternal and Newborn Health. The Office will require performance data to aid in their own decision making, to pass on to the regional networks and related ministry programs to help them in the planning process, and to demonstrate accountability.

Earlier in this chapter we drew your attention to the work of well-known physician and health policy analyst, David Eddy (1998) who suggested that four factors affect how

good performance indicators will be. He argued there is a need to pay attention to (1) the purpose of measurement, (2) the entity being measured (hospitals, physicians, health plans), (3) the dimension, and (4) who will use the performance indicators. The proposed set of performance indicators was designed so that certain indicators can be used for different audiences and different purposes. Note that several areas have been listed for more than one audience.

Finally, once the data achieves appropriate levels of data quality and completeness, the proposed data system could be used to populate submissions to CIHI and CPSS. This approach would eliminate duplication currently found in the overlap in data fields currently entered by staff into Niday and also abstracted by health records for CIHI submission.

Ontario Maternity Care Expert Panel
Appendix F
Summary – Hospital Survey, October 2005

OMCEP members recognized that one of the critical areas in maternity care was intrapartum care. In order to understand the magnitude of the issues related to intrapartum care a survey tool was developed, and sent to every hospital in Ontario for completion. The survey questions attempted to understand the relationships between number of births in a year and the health human resources needed to provide comprehensive maternity care.

Development of the Survey Tool

OMCEP members developed an original survey tool as an appropriate tool could not be found in the existing literature. In order not to overburden the people who were required to provide data some difficult decisions were made to exclude questions. The survey was developed with the goal of understanding the number of institutions who had funded intrapartum program and the health human resources required to support them. Many of the participants who provided data from their hospitals did not have the data we requested easily available, others clearly described that intrapartum care was integrated with other programs and so to identify nurses who only worked in one area was impossible, and who attended births on a regular basis as against those who occasionally attend was unknown. As a result some of the answers are difficult to interpret as participants were unable to differentiate between intrapartum and pre and post partum health human resources. We need to conduct the survey each year, but significant changes will need to be made to the survey to ensure the usefulness of the data for planning services in the future. These difficulties were also encountered when we tried to find health human resource data from other sources.

Methods

Hospitals that provided maternity care were identified through the Ontario Hospital Association. During the 18 months that the panel was working some hospitals in Ontario discontinued intrapartum services. Of the surveys that were returned,we were able to report on 98 hospitals in Ontario that provide intrapartum care for women.

Participants returned the survey to the panel and a research associate with maternity experience entered the data into a database. Data that was missing or appeared inaccurate was checked, by phone or email, with the person who provided the data. Some participants identified that the survey was difficult to interpret and took too long. Lessons learned for a future survey is to identify from where data may be obtained more easily and to only ask for hospital specific data. In addition, data from public health units, midwifery practices, Community Health Centres and other organizations will enable a more complete data set to be obtained. Further research is required to ensure the survey is reliable and valid and answers provide a true overview of the maternity services in Ontario.

Results: April 1st 2004 – March 31st 2005

Description	Number	Notes
Hospitals surveyed	103	
Intrapartum offered	98	
Intrapartum not offered	5	Discontinued 1998 - 2004
Births in hospitals (includes those who discontinued in 2004)		
1 –100	19	2 hospitals had no births in the fiscal year.
101-500	23	
501-1,000	16	
1,001-3,000	29	
3,001 +	14	
Number of hospitals with no coverage from:		Of 98 hospitals surveyed, 30 have only FP and or midwifery coverage in labour and birth
OB intrapartum	30	
FP intrapartum	7	
MW intrapartum	47	
Number of hospitals with expected change of on call rotation		
OB	24	
FP	22	5 decrease, 19 increase
MW	15	13 decrease, 9 increase 4 decrease, 11 increase
Number of hospitals with no newborn admitting privileges		
Pediatrician	44	
FP	5	
Number of hospitals with no dedicated intrapartum maternity nurses	18	11 additional hospitals have less than 10 dedicated maternity – care nurses
Number of hospitals who identified a lack of maternity nurses for care	26	
Number of hospitals who anticipated a change in nursing complement		
Decrease in numbers	12	
Increase in numbers	24	
Number of hospitals with all three professions who attend births	51	2 have OB and MW 17 have OB and FP 3 have FP and MW

One hundred and three surveys were sent to hospitals across the province. Five institutions identified that they no longer provide intrapartum services. Several institutions are part of a corporation that offers intrapartum services as more than one site. This accounted in part for the differences in hospitals and sites were births take place. We identified 98 sites where births occurred that are recognized as funded intrapartum units. Babies continue to be born in some institutions where services are not funded, as all maternity care providers will understand. We have reported in charts a summary of the six proposed regional perinatal regions in the province and as can be seen different issues will be a priority for the regions. For some regions offering caesarean sections at each site will never be possible and so plans for pregnancy risk assessment is paramount to avoid unnecessary transfers in labour. We identified 10 small hospitals that have caesarean section limitations, but this does not include those who never have locally available caesarean section capability. Of interest 8 hospitals identified limited caesarean section service in institutions where there are more than 250 babies are born each year.

Service Capability

Description	Number of hospitals	Notes
Caesarean section 24/7 Intermittently Not locally available	 64 29 9	Of those with intermittent availability 15 had more than 30 days a year when they could not offer a c/section
Hospital personnel who perform caesarean sections OB FP Surgeon	 74 5 9	Not all hospitals provide c/section capability
Hospitals with Epidural/Spinal availability 24/7 for pain relief and c/section 24/7 for c/section only When staff available	 59 8 25	Not all hospitals responded to this question
Hospitals with obstetrical ultrasounds availability 24/7 for all obstetrical ultrasounds 24/7 for some ultrasounds Day time only	 28 30 27	Not all hospitals responded to this question

Participants who completed the survey were asked which caregiver group most limits the hospitals c/section capability. Of those who answered the question, 40 hospitals identified anesthesia as the limiting group most often, 23 identified having an appropriate surgeon (OB, FP or Surgeon), and only 3 as lack of nursing staff. In hospitals where epidural anesthesia/analgesia is available the majority reported that they are provided by anaesthetists (n = 71). In addition GP anaesthetists provide epidural services at 23 hospitals.

Support Services

OMCEP reviewed the list of key services that should be available locally for a comprehensive support system for maternity. Many hospitals did not provide these services or services were intermittent. Prenatal education programs offered by hospitals have not been a priority for many years as Public Health Departments have taken a lead role in providing these classes. Many hospitals did identify that they had joint programs with outside agencies.

Description	Number of Hospitals	Notes
Hospital availability of Breastfeeding Support		
24/7 – by the hospital	19	2 hospitals did not respond to this question
Clinic/limited hours	55	
Not provided	12	
Referral out	15	
Hospital availability of Social Work		
24/7 in hospital	5	2 hospitals did not respond to this question
Clinic/limited hours	61	
Not provided	22	
Referral out.	13	
Hospital availability of Prenatal Education Classes		
In hospital	25	2 hospitals did not respond to this question
Not provided	13	
Partner with outside agency	50	
Referral out	13	
Hospital availability of Routine Antenatal Screening		3 hospitals did not respond to this question
In hospital	59	
Not Provided	11	
Referral out	30	
Hospital availability for mental health assessments (mood, depression)		2 hospitals did not respond to this
In hospital	30	

Not provided Referral out	20 51	question

Future Maternity Care Capacity

Participants were asked to indicate anticipated changes in capacity to provide maternity care in the future. The information is important and would be part of the regional organizations to monitor so that plans can be implemented to understand the implications for the region. This is particularly important in areas where there is an anticipated reduction in services. Of interest three hospitals that identified that the number of births is anticipated to increase also identified that there caesarean section capacity is expected to decrease, but 26 hospitals identified that their caesarean section capacity and number of births would increase in the future.

Two hospitals identified that the number of births is anticipated to increase but the capacity to provide epidurals and or spinals is expected to decrease, while 27 hospitals identified an increase in both numbers of births and epidural/ spinal capacity.

Description	Number of Hospitals	Notes
Hospitals birth capacity Will increase Will decrease Stay the same	 45 7 45	 6 hospitals did not answer this question or indicated that it was not applicable
Hospitals c/section capacity Will increase Will decrease Stay the same	 34 8 51	 10 hospitals did not answer this question or indicated that it was not applicable
Hospitals epidural/spinal capacity Will increase Will decrease Stay the same	 36 3 54	 10 hospitals did not answer this question or indicated that it was not applicable
Hospitals ultrasound performance capacity Will increase Will decrease Stay the same	 33 3 61	 6 hospitals did not answer this question or indicated that it was not applicable
Hospitals neonatal care capacity Will increase Will decrease Stay the same	 31 2 61	 9 hospitals did not answer this question or indicated that it was not applicable
Hospitals 24/7 post partum mood disorder, social work, and breast feeding support	3	2 hospitals refer out for all three services 17 hospitals have 24/7 mental

		health services, and clinics for social work and breast feeding with limited hours

Education Capacity

A recurring theme in the deliberations of OMCEP from panel members and those who provided input through focus groups, interviews and written reports has been the difficulty of offering excellent maternity education for all learners. Several questions on the survey asked participants to identify which professional groups had access to clinical learning in their institutions, how many would designate their institution as an academic health sciences centre, and if they had capacity for more or different learner groups. If we require more maternity education spaces in clinical settings there is capacity within institutions that do not have learners that should be investigated by the educators of programs.

Description	Number of Hospitals	Notes
Hospital is part of an academic health science centre Yes No	 13 87	3 hospitals did not know whether their hospital is part of an academic health science centre
Hospital is a clinical education site for obstetric residents/fellows Yes No	 38 65	
Hospital is a clinical education site for undergraduate medicine learners Yes No	 61 42	
Hospital is a clinical education site for family medical residents Yes No	 56 47	
Hospital is a clinical education site for RPN learners Yes No	 43 58	Registered Practical Nurses learners – college program
Hospital is a clinical education site for undergraduate (BScN) learners Yes No	 70 33	Registered Nurses program offered through universities and in collaboration with some colleges
Hospital is a clinical education site for Midwifery learners		

Yes	60	
No	43	

The major issue for clinical education has been providing excellence in experience in intrapartum care. The analysis therefore included those learners who potentially could provide intrapartum care – physicians (OB and FP), midwives, and registered nurses. There are 16 hospitals that have no pre licensure (undergraduate) learners (nursing, medicine, midwifery) on a regular basis for part of the clinical rotation of maternity care.

The capacity of hospitals to provide quality maternity education could not be assessed through this survey but we do understand where there are potential sites that should be explored. Only 40 hospitals provide clinical experiences for all three pre-licensure learners, a further 6 are nursing and medical learner sites but not midwifery sites. Three hospitals provide clinical experience for medical and midwifery learners. Fifteen hospitals provide clinical experience for midwifery and nursing learners but not medical learners.

Conclusions

OMCEP members have had the opportunity to study a cross section of maternity services with reports from hospitals of the fiscal year 2004-05. The data clearly demonstrates instability in the system. Planning across the province will be important if women are to be informed of available institutions in which they can be admitted to give birth. There are always lessons learned from conducting a survey. As described in the introduction, panel members had to develop a new survey tool and there were some questions that participants found difficult to interpret. In another cross sectional study these questions should be modified and pilot tested prior to requesting information from hospitals.

One of the most difficult issues is to count the number of providers in maternity care. This is because nurses, midwives and physicians may work or have admitting privileges in more than one institution, especially in urban settings. It will be very important for future planning of new providers to fully understand the number who are working in more than one place, especially in light of the SARS outbreak that highlighted the importance of isolating staff from one institution from staff from other institutions if outbreaks are to be contained. In addition, it is important to know what the 'right' number of obstetricians, midwives, family physicians and nurses is to sustain a work force for the future. If we had data on the 'right' number for 130,000 births we would be able to predict how many more we need to provide care in the future for 157,000 births per year.

Ontario Maternity Care Expert Panel
Breakdown of Hospital Data by Region

Ontario Maternity Care Expert Panel 2004-05 Hospital Survey

Provincial Overview (all regions)

Hospital birth volume	Hospitals providing intrapartum care	Hospitals with nursing staff below required levels	Hospitals where Caesarean section availability is limited*	Hospitals expecting a decrease in intrapartum on-call rotation	Hospitals expecting a decrease in paediatric on-call rotation
1-100	16	2	10	3	2
101-250	11	0	5	2	1
251-1000	28	4	8	5	6
1001-3000	29	3	1	4	5
3001-5000	12	1	0	3	1
5000+	2	0	0	1	1
Totals	**98**	**10**	**24**	**18**	**16**

*In hospitals offering Caesarean section, the service was not available for three or more days of the year due to provider unavailability.

Ontario Maternity Care Expert Panel
Breakdown of Hospital Data by Region

Ontario Maternity Care Expert Panel 2004-05 Hospital Survey

Proposed Maternity Care Ontario region: CENTRAL

Hospital birth volume	Hospitals providing intrapartum care	Hospitals with nursing staff below required levels	Hospitals where Caesarean section availability is limited*	Hospitals expecting a decrease in intrapartum on-call rotation	Hospitals expecting a decrease in paediatric on-call rotation
1-100	0	0	0	0	0
101-250	4	0	2	1	0
251-1000	5	0	0	0	0
1001-3000	9	0	0	2	1
3001-5000	6	0	0	1	1
5001+	2	0	0	1	1
Totals	**26**	**0**	**2**	**5**	**3**

*In hospitals offering Caesarean section, the service was not available for three or more days of the year due to provider unavailability.

Ontario Maternity Care Expert Panel
Breakdown of Hospital Data by Region

Ontario Maternity Care Expert Panel 2004-05 Hospital Survey

Proposed Maternity Care Ontario region: CENTRAL WEST

Hospital birth volume	Hospitals providing intrapartum care	Hospitals with nursing staff below required levels	Hospitals where Caesarean section availability is limited*	Hospitals expecting a decrease in intrapartum on-call rotation	Hospitals expecting a decrease in paediatric on-call rotation
1-100	3	0	2	1	1
101-250	0	0	0	0	0
251-1000	4	0	1	0	0
1001-3000	6	2	1	1	1
3001-5001	2	1	0	0	0
5001+	0	0	0	0	0
Totals	**15**	**3**	**4**	**2**	**2**

*In hospitals offering Caesarean section, the service was not available for three or more days of the year due to provider unavailability.

Ontario Maternity Care Expert Panel
Breakdown of Hospital Data by Region

Ontario Maternity Care Expert Panel 2004-05 Hospital Survey

Proposed Maternity Care Ontario region: EAST

Hospital birth volume	Hospitals providing intrapartum care	Hospitals with nursing staff below required levels	Hospitals where Caesarean section availability is limited*	Hospitals expecting a decrease in intrapartum on-call rotation	Hospitals expecting a decrease in paediatric on-call rotation
1-100	2	1	0	0	0
101-250	2	0	0	0	0
251-1000	9	2	5	2	3
1001-3000	9	1	0	1	2
3001-5000	2	0	0	2	0
5001+	0	0	0	0	0
Totals	**24**	**4**	**5**	**5**	**5**

*In hospitals offering Caesarean section, the service was not available for three or more days of the year due to provider unavailability.

Ontario Maternity Care Expert Panel
Breakdown of Hospital Data by Region

Ontario Maternity Care Expert Panel 2004-05 Hospital Survey

Proposed Maternity Care Ontario region: NORTH EAST

Hospital birth volume	Hospitals providing intrapartum care	Hospitals with nursing staff below required levels	Hospitals where Caesarean section availability is limited*	Hospitals expecting a decrease in intrapartum on-call rotation	Hospitals expecting a decrease in paediatric on-call rotation
1-100	4	1	4	0	0
101-250	1	0	0	0	0
251-1000	3	1	0	0	1
1001-3000	1	0	0	0	1
3001-5000	0	0	0	0	0
5001+	0	0	0	0	0
Totals	**9**	**2**	**4**	**0**	**2**

*In hospitals offering Caesarean section, the service was not available for three or more days of the year due to provider unavailability.

Ontario Maternity Care Expert Panel
Breakdown of Hospital Data by Region

Ontario Maternity Care Expert Panel 2004-05 Hospital Survey

Proposed Maternity Care Ontario region: NORTH WEST

Hospital birth volume	Hospitals providing intrapartum care	Hospitals with nursing staff below required levels	Hospitals where Caesarean section availability is limited*	Hospitals expecting a decrease in intrapartum on-call rotation	Hospitals expecting a decrease in paediatric on-call rotation
1-100	5	0	2	1	1
101-250	2	0	1	1	1
251-1000	1	0	1	0	0
1001-3000	1	0	0	0	0
3001-5000	0	0	0	0	0
5000+	0	0	0	0	0
Totals	**9**	**0**	**4**	**2**	**2**

*In hospitals offering Caesarean section, the service was not available for three or more days of the year due to provider unavailability.

Ontario Maternity Care Expert Panel
Breakdown of Hospital Data by Region

Ontario Maternity Care Expert Panel 2004-05 Hospital Survey

Proposed Maternity Care Ontario region: SOUTH WEST

Hospital birth volume	Hospitals providing intrapartum care	Hospitals with nursing staff below required levels	Hospitals where Caesarean section availability is limited*	Hospitals expecting a decrease in intrapartum on-call rotation	Hospitals expecting a decrease in paediatric on-call rotation
1-100	2	0	2	1	0
101-250	2	0	2	0	0
251-1000	6	1	1	3	2
1001-3000	3	0	0	0	0
3001-5000	2	0	0	0	0
5000+	0	0	0	0	0
Totals	**15**	**1**	**5**	**4**	**2**

*In hospitals offering Caesarean section, the service was not available for three or more days of the year due to provider unavailability.

Ontario Maternity Care Expert Panel
Schedule G - Methods, Focus Groups, Key Informants and Stakeholders

Methods: How the Panel did its Work

The Ontario Maternity Care Expert Panel (OMCEP) was created by the Ontario Women's Health Council and began its work in October of 2004. The Panel was made up of members from across the field of maternity health care including individuals reflecting all maternity care professions, regions of Ontario and the academic and broader community. The panel will report directly to the Women's Health Council and it is expected that the report will go to the Premier of Ontario in 2006, followed by broader dissemination.

In all, there were 15 panel members including advisory members. The Panel chose a four-member Executive Committee with representation from each of the four provider groups involved in maternity care: family practice, midwifery, nursing and obstetrics. The Executive Committee included Terry O'Driscoll, MD, CCFP, FCFP, Vicki Van Wagner, RM, MES, PhD (cand.), Jennifer Medves, RN, PhD, and Renato Natale, BSc., MD, FRCS(C). Wendy Katherine, of the Ministry of Health and Long-Term Care, was hired as Project Manager for OMCEP.

The full membership of the Panel is listed on page XX

Determining the Scope of the Panel's Work

One of the first tasks the Panel addressed was to confirm the scope for the project. The scope document served as a useful focus and agenda for the Panel's efforts over the next 18 months.

Ontario Maternity Care Expert Panel Scope Document

Goal: The Ontario Maternity Care Expert Panel is a multi-disciplinary group of maternity care professionals and consumers, which will develop recommendations for the creation of a coordinated province-wide system of essential maternity care services. The panel will consider:

Access & System:

Access to maternity and newborn care across the province, including rural and remote areas, aboriginal communities and special populations;

Strategies to promote effective, respectful inter-professional collaboration, consultation and referral practices;

Co-ordination of the maternity care system and evolving primary-care initiatives including local health system integration;

Governance & Advocacy:

Development of ongoing structures such as a multidisciplinary provider advisory group which can represent the interests of maternity care stakeholders and a central planning and funding body to coordinate the provision of maternity services at the provincial level;

Consumer input into ongoing development of the maternity care system;

Administrative Framework (human resources, fiscal, regulatory, legal):

Strategies to support the development of a co-ordinated human resource plan for maternity care including effective use of primary and secondary-care providers to serve low-risk and high-risk populations and recruitment and retention of care providers;

Development of remuneration models and mechanisms to support access, sustainability of maternity services and inter-professional collaboration;

Development of regulatory and academic frameworks to support inter-disciplinary models of care and education;

Medico-legal factors and the evaluation of their influence on the provision of maternity care;

Practice & Evaluation:

Strategies to promote best practices and quality care for childbearing women and families including woman-centred and family-centred care; and,

Data collection and reporting that can be used to evaluate the performance of maternity care across the province.

Organizing the Work of the Panel:

OMCEP created three subcommittees and two ongoing working groups to address the 11 issues identified in the Scope Document.

The ***Delivery Models & Access Subcommittee*** examined delivery models to determine which could provide the highest quality care to women and their babies, and focused on issues affecting the accessibility of maternity care services to women in all parts of Ontario and across society. These examinations included:

- the particular needs and services for women living in rural and remote areas, and for other women with barriers to health care access; and
- issues relating to the coordination of maternity care with evolving primary care initiatives in Ontario and new regionalization models, such as the Local Health Integration Networks (LHINs); and

- the role(s) of each of the main maternity care provider groups, both individually and when working inter-professionally: obstetricians, family physicians, midwives and nurses/nurse practitioners; and
- research into current operational models and proposed ideal models were explored with a view to outlining a template that communities could review and modify according to local needs and resources.
- models were examined to see which would work well in different settings, from advanced-care units in tertiary-care hospitals, to maternity care units in smaller or regional settings, to dedicated maternity care centres (either in hospital or stand-alone), and for home births.

Common themes were explored and recommendations about current systemic changes were developed.

The ***Human Resources and Education Subcommittee*** investigated the current state and future need for maternity care human resources and prepared recommendations for recruiting, training and retaining quality maternity providers to meet Ontario's future needs. These examinations included:

- analysis of human resource trends to identify current and/or future shortages or mal-distribution issues across regions; and
- specific issues relating to aboriginal midwifery
- capacity issues among educational programs, i.e., are they able to meet Ontario's demands?
- promoting maternity care as a worthwhile career goal to medical and nursing students;
- identification of opportunities to strengthen inter-professional and collaborative learning/teaching in Ontario including the possibility of crossover training, i.e., midwives sharing their expertise with obstetrical students and vice versa.

Recommendations were developed using the research and expertise of the panel.

The ***Structure Subcommittee*** examined Ontario's systems for the management and payment of maternity care services with the aim of reducing structural barriers to optimal maternity care in the province. These examinations included:

- researching ways to streamline management and support for maternity services across ministries and programs; and
- identifying legislative, regulatory, funding, risk management or liability protection barriers that prevent the implementation of best practices in maternity care – including acting as barriers to team-based or collaborative care – and measures to overcome these barriers; and
- specific attention to "the culture of risk" – areas where rising liability protection costs and exposure deter best practices and, in particular, where they complicate team-based, collaborative service delivery opportunities.

Specific recommendations were developed that will require ongoing alignment of provincial regulatory colleges and national liability protection and risk management organizations.

The ***Consumer Issues and Vision Working Group*** focused on measures to ensure that women's perspectives informed all aspects of the Panel's work including:

- consultation with women about their experiences using both structured interviews and focus groups; and
- review of surveys and other efforts to measure women's satisfaction with maternity services; and
- consultation with maternity health service providers relating to measures that can ensure that the needs and preferences of women and their families are determining factors in maternity health care delivery in Ontario.

Extensive deliberation with panel members about the scope of the vision and consultation with other stakeholders occurred to ensure viability and accuracy.

The ***Evaluation Working Group*** faced the challenging task of developing recommendations to support the effective and systematic evaluation of maternity health services. The group's work included:

- developing an inventory of existing local, provincial, national, and international programs and datasets that currently contribute to evaluations of various aspects of maternity care systems; and
- designing a new maternity care evaluation system for Ontario, with measurable outputs, outcomes and indicators, following the format of a Program Logic Model and based on deliberations and recommendations from the other committees and working groups.

For outcomes where there were few or no existing indicators, we considered how existing, emerging or new data sources might be used to develop indicators and suggested measures in each of these areas.

Feedback on the draft logic model and the preliminary list of existing and new indicators was sought from the larger OMCEP panel.

Original Research

Original research done by the panel included:

- An extensive literature review and development of a reference library that will form the basis for future deliberations and planning
- A hospital survey of current, recent past and near future plans within the 100 facilities in Ontario that provide maternity care services
- A series of focus groups with women and health care providers. These sessions provided the panel with a broad sense of the issues facing women and their health care providers across the province. They also served as a testing ground for our vision and principles, the concepts and recommendations as they developed
- An online survey through the Ontario Women's Health Council website provided further information from the women of Ontario, the issues that they deemed important to their care, and a series of comments about the maternity care services in Ontario

The Panel's Environment:

The Panel had the advantage of being launched at a time of heightened awareness of primary health services and maternity health services in particular. The results of several key maternity care reports, many of which had recently completed literature reviews, were being released. This facilitated the environmental scan and provided current findings from other jurisdictions that helped the Panel to identify key areas of concern. Specific joint initiatives with the Ontario College of Family Physicians (Babies Can't Wait) and Ryerson/Rogers (Integrated Maternity Care for Rural and Remote Communities) funded provincially from the Primary Health Care Transition Fund (PHCTF)and the Multidisciplinary Collaborative Primary Maternity Care Program (MCP^2) from the federal PHCTF ensured that all projects were working towards a common goal even though the approaches taken were quite varied.

In all aspects of its work, the panel has sought the most inclusive process possible. We have been open to all practitioners, to women and the community at large. We have consulted broadly across the field and, while we found much to concern us, we also found widespread and growing awareness of the importance of improvements in maternity care services.

A summary of the submissions we received, the groups and individuals consulted and the conferences attended throughout the Panel's work follows. The project bibliography is contained in Appendix B .

Focus Groups/Key Informant Interviews

Aboriginal Organizations - Toronto Aboriginal Midwifery Initiative, National Aboriginal Health Organization, Aboriginal High-Risk Newborn Services, Anishnawbe Community Health Centre, Anishnawbe Mushkiki Aboriginal Community Health Centre, First Nations and Inuit Health Branch, Health Canada

Midwifery Integration - Four consultants previously involved in Midwifery Integration Review Teams

Maternity Care Education Programs – Representatives from Association of Professors of Obstetrics and Gynecology, Consortium of Midwifery Education Programs, Nursing Programs

Professional Associations

Ontario College of Family Physicians, Association of Ontario Midwives, Ontario Medical Association – Association of Ontario Midwives Liaison Group, Ontario Nurses Association, Registered Nurses Association of Ontario (Childbirth Nurses Interest Group)

Hospitals/Centres

Guelph Hospital – representing Chief of Staff, Midwifery, Anaesthesia, Obstetrics, Nursing

Hamilton Maternity Centre- staff representing centre management, family practice, midwifery nurse practitioner

Owen Sound Hospital – staff representing obstetrical nursing, midwifery, public health, management, consumers, nutrition, prenatal education

St. Josephs Hospital, Toronto – representatives involved with services to uninsured women

Thunder Bay Hospital – staff representing obstetrics, hospital management, family practice, midwifery, nurse practitioners.

Others

Regulatory Bodies – including College of Physicians and Surgeons of Ontario, College of Nurses of Ontario, College of Midwives of Ontario

Women's Groups – Evangeline Residence, Toronto, mother and infant drop-in; Anishnawbe Mushkiki women-infant group, Thunder Bay; Healthy Babies, Healthy Children mother-infant group, Norwest CHC, Thunder Bay.

Dr. Ruth Wilson, Ontario Women's Health Council

Conferences/Presentations:
Best Start Annual Conference
Canadian Association of Midwives Conference
Family Health Team Action Group
Ontario Provincial Perinatal Partnership
Ontario College of Family Physicians, Maternity Care Day, 2004 & 2005
Ontario Hospital Association Conference
Perinatal Partnership Program of Eastern and South-eastern Ontario
South-west Ontario Perinatal Program

Ontario Maternity Care Expert Panel
Appendix H - Collaborative Projects Outline

Babies Can't Wait - Ontario College of Family Physicians
Project Summary

The Babies Can't Wait Project brings together a wide variety of major organizations that educate and support the providers of maternity care in our province.

Through this collaboration, this project is designed to identify acceptable models of interdisciplinary maternity care, identify strategies to overcome problems in implementation, and move us from research and discussion to action.

Following an extensive literature review, a variety of interdisciplinary models for delivering primary maternity care services were developed and are being tested with current providers, non-providers and
future providers through surveys, key informant interviews and focus groups.

This consensus-building workshop will be used to validate the research and develop an action plan to facilitate the implementation of interdisciplinary models of primary maternity care that will help recruit and retain providers.

Integrated Maternity Care for Rural and Remote Communities – Ryerson/Rogers
Project Summary

Introduction
This project addresses the current crisis in maternity care provision in rural and remote communities by facilitating the development of inter-disciplinary models which are suited to the needs of individual communities. Consumers need accessible, sustainable maternity care services in order to have healthy communities which are viable for young families. This requires local provision of maternity care services for low-risk, healthy women and their babies. To achieve this goal, care providers in rural and remote communities need to work together to develop sustainable models of maternity care provision which support the long-term personal and professional needs of the maternity care team.

Too often, rural maternity care has been precariously dependent on the goodwill and dedication of a few individuals. In order for maternity care to be viable in the long-term, sustainable models need to be developed which are founded instead on the combined talents and resources of an inter-disciplinary team. Numerous health care organizations in Canada and around the world have called for improved collaboration between health care providers as essential to improving quality and access to maternity care especially in rural and remote areas.

This project seeks to build solutions to current problems in the availability of maternity care in rural and remote communities by exploring how registered midwives could work

as part of an inter-disciplinary team with family physicians, hospital and community nurses. This process will engage members of the health professions, consumers, as well as hospital and community administrators from six Ontario communities in identifying existing needs and community-based solutions. This project has the potential to substantially benefit maternity care consumers, health care providers, and the health care system.

Objectives
The purpose of this project will be to assist in the development of inter-disciplinary models of maternity care service delivery in order to:

1) preserve and enhance the maternity services available to underserved populations in rural and remote communities,
2) strengthen local health care services and community stability,
3) increase job satisfaction among existing health care workers,
4) provide educational opportunities for nursing, midwifery and medical students in rural communities, and
5) encourage career development among local people as future health care providers.

While the purpose of the project is clearly agreed prior to the start, the process of achieving the goals will be varied according to the identified needs of each community.

Fundamental hypotheses to be tested in this research project are:

1) Change to inter-disciplinary models of maternity care can be facilitated by a participatory process.
2) Inter-disciplinary models have the potential to strengthen the sustainability of maternity services in rural communities.

Project Activities
Project objectives will be achieved through facilitating the process of developing inter-disciplinary models in six rural and remote communities in Ontario where midwifery is either not established or exists in solo or small practice models. Based on a participatory action model, local working groups in these communities are engaging in the process of developing collaborative models of maternity care provision which will include midwives, physicians, hospital and community nurses. The research team will assist in identifying existing issues through anonymous questionnaires, interviews and focus groups. Links will be established between the six communities so that they can identify strategies, resources, strengths and barriers which may be common to some or all of the participants. Participants will be able to share information about their successes and challenges at an invitational conference with stakeholder organizations in Year 2. Common strategies will be developed to address common problems.

Community Partners
The partner communities—three located in northern Ontario, three in southern Ontario—were selected because they have expressed an interest in integrating midwifery into their

maternity care services. Community partners represent some of the variation seen in rural areas of Ontario from very remote northern communities accessible only by air and sea, to more easily accessible rural communities and those that lie just outside the orbit of larger urban centres.

All participating communities have identified an interest in:

1) recognizing the importance of a team approach to maternity care which values the contributions of nurses, physicians and midwives in providing effective and sustainable maternity care,
2) integrating midwifery into the existing maternity care service,
3) working within a multidisciplinary group to develop a common evidence-based approach to care,
4) recognizing the unique strengths of each profession's contributions to the care team as well as the limitations and the areas of overlap,
5) identifying the existing barriers to inter-disciplinary collaboration in rural maternity care, and
6) developing a model for sustainable maternity care that includes community input.

Outcomes

The projected outcomes of this project are manifold. Foremost, this project will provide an opportunity for facilitation of local inter-disciplinary collaborative efforts arising out of locally identified barriers and opportunities for collaboration. Additionally, factors that support and inhibit the development of collaborative models will be identified and recommendations will be formulated for stakeholder organizations. In concert with other efforts such as the Babies Can't Wait initiative, these outcomes have the potential to make a significant contribution to the development of collaborative maternity care in Canada.

Funding

This project received funding from the Primary Health Care Transition Fund of the Ontario Ministry of Health and Long-Term Care and Ryerson University Faculty of Community Services. Participating communities also provided generous in-kind support.

Judy Rogers, Principal Investigator
Lucas Sorbara, Project Coordinator
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Midwifery Education Program
Ryerson University
350 Victoria Street, Toronto, ON M5B 2K3

Multidisciplinary Collaborative Primary Maternity Care Project (MCP^2)
Project Summary

In May 2004, Health Canada funded the Multidisciplinary Collaborative Primary Maternity Care Project through the Primary Health Care Transition Funds Program. The project was proposed to overcome health human resource shortages and improve access to primary maternity care.

Partner organizations in the project include:
· Association of Women's Health, Obstetric and Neonatal Nurses (Canada),
· Canadian Association of Midwives,
· Canadian Nurses Association,
· College of Family Physicians of Canada,
· Society of Obstetricians and Gynaecologists of Canada, and
· Society of Rural Physicians of Canada.

The overarching goal of this project is to reduce barriers and facilitate the implementation of national multidisciplinary collaborative primary maternity care strategies as a means of increasing the availability and quality of maternity services for all Canadian women.

MCP 2 aims to foster a greater understanding of potential collaborative care models and improve confidence of health care providers and the public in the benefits of collaborative services.

The legacy objective for the project is the development of a National Primary Maternity Care Committee that currently includes representatives from each of the partner associations, provincial government representatives and consumers.

The members of the national committee are also involved in one of five working groups established to focus on the topics of model development, harmonization/legal, communication, public policy, and research/evaluation.

The first meeting of the national committee was on January 12, 2005 in Ottawa, with subsequent meetings in June and September 2005 and January and May 2006.

The project has seven main objectives, listed on the project overview, which are addressed by the working groups and consultants contracted to facilitate information gathering and development of implementation strategies including:

· Model Development Working Group: Kathy Herschderfer, International Confederation of Midwives, lead the team that produced a document that includes descriptions of maternity service provision and collaborative models in the UK, the Netherlands, Germany, France, Sweden and Australia. With feedback from the working group, Dr. Malcolm Anderson facilitated the completion of guidelines for development of multidisciplinary collaborative maternity care models in February 2006. This group will also be involved in developing knowledge transfer tools to assist with implementation of collaborative models. These reports are available on the website.

· Harmonization/Legal Working Group: This working group has drafted a list of fundamental elements for a womancentred, communitybased model of multidisciplinary collaborative care. This list will serve a basis from which to identify the regulatory and/or legislative changes that may be necessary to facilitate collaborative models of maternity care. The group is also collecting documents that could be barriers to multidisciplinary collaborative primary maternity care. In September 2005, the national

meeting included a panel discussion on liability issues in collaborative practice. A summary of the panel discussion is available on the website.

· Communications Working Group: Communication strategies for the project have focused on developing key messages for the project and the dissemination of information on the benefits of collaborative practice to health care providers, consumers, governments and other stakeholders. Information inserts describing the benefits of collaborative practice appeared in the fall issues of the professional journals of the partner organizations. An advertisement will appear in Chatelaine Magazine in March to inform consumers of the benefits of collaborative practice.

· Public Policy Working Group: This working group is involved in garnering support of governments and key stakeholders in moving the project recommendations forward. Project representatives will meet with 5 provincial government representatives in March and April 2006 and seek ongoing support for the implementation of new multidisciplinary collaborative maternity care teams using the guidelines developed by the project.

· Research/Evaluation Working Group: Dr. Barbara Davies and Dr. Jennifer Medves are leading the evaluation portion of the project, and in particular they will be assessing the impact of the project on the knowledge, attitudes and beliefs of health care providers about collaboration. This group has completed interviews with key stakeholders, focus groups at national meetings and web based surveys of 800 health care providers. They will repeat the surveys in March 2006 to measure any change in knowledge, attitudes and beliefs. Copies of all reports and updates of the progress of the project will be posted on the website at www.mcp2.ca. We thank you for your interest and ongoing participation with this valuable project.

Ontario Maternity Care Expert Panel

Appendix I – Maternity Care Surveillance Report

1. Introduction and Overview

Key indicators of maternal and newborn health in Ontario are presented below. These data are presented because they provide important information about maternal and newborn health in Ontario, information that has been used to guide the development of the Panel's recommendations.

A comprehensive perinatal surveillance report was beyond the scope of the work of this Panel. In order to ensure that this important work be done, in a regular and ongoing way, the Panel has recommended that a Maternity Care Information System be developed in parallel with the structures to coordinate and manage maternity care in Ontario.

In 2005, the Ontario Ministry of Health and Long Term Care adopted new regional boundaries – the Local Health Integration Networks (LHIN). Wherever possible, data are presented by LHIN. Maps showing Ontario's LHINs appear on the next two pages.

The data for this Report were provided by Health Information Products & Services Units, Knowledge Management and Reporting, Ontario Ministry of Health and Long Term Care, using the following sources:

Hospital Discharge Abstract Database (FY 1996 to FY 2003)	Canadian Instiute for Health Information
Population by Local Health Integration Network (CY 1996 to CY 2003)	Demography Division, Statistics Canada
Vital Statistics (CY 1996 to CY 2001)	Registrar General of Ontario/Statistics Canada
OHIP Claims for Medical Services (FY 2001 to FY 2003)	Ontario Ministry of Health and Long-Term Care
Birth Tables (CY 2002 and CY 2003)	Statistics Canada
Claims Database Prototype (FY 1998 to FY 2003)	Ontario Ministry of Health and Long-Term Care
Hospital Survey 2004-05	Ontario Maternal Care Expert Panel
Daily Census Summary (FY 2003)	Financial and Information Management Branch, Ontario Ministry of Health and Long-Term Care

Notes:
1. CY= calendar year; FY = fiscal year
2. All population estimates and vital statistics from Statistics Canada are based on calendar year.
3. Analyses performed at the Health Information Products & Services Unit in June-October, 2005.

The data presented below include areas where the health of Ontario mothers and babies is comparable to, or better than, those of others in Canada, and areas where we in Ontario lag behind other provinces and territories. It is also noteworthy the rates of certain interventions in birth (including induction of labour and Caesarean sections and assisted vaginal births - the use of forceps or vacuum extraction) suggest higher rates of interventions in Ontario than in other parts of Canada.

Positive trends noted in Ontario include:

- lower rates of teenage pregnancy than in other Canadian provinces and territories;
- rates of maternal hospital readmission lower than the Canadian average;
- rates of neonatal hospital readmission lower than the Canadian average.

Areas where Ontario data needs further exploration to understand differences in Ontario data as compared to other jurisdictions:

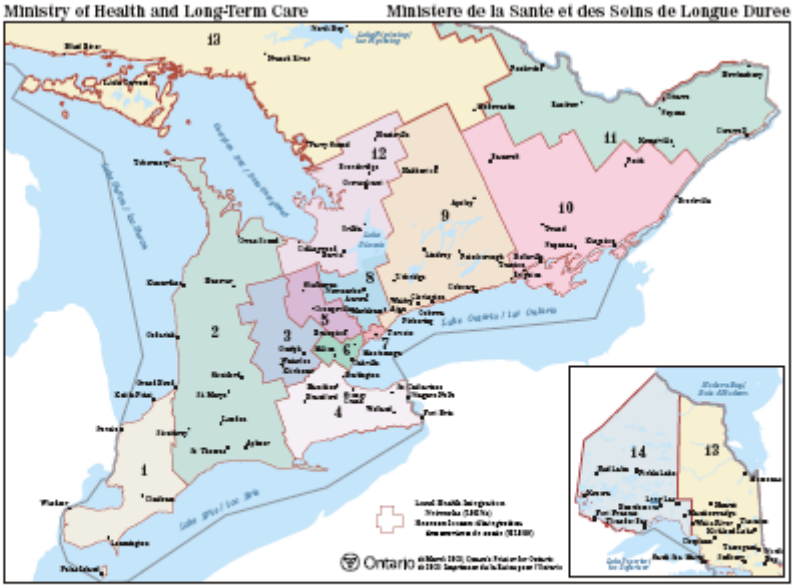
- a labour induction rate about twice that of the Canadian average;
- a Caesarean section rate about 25% higher than the Canadian average;
- decreasing numbers of women having spontaneous labour and spontaneous vaginal births, that is women giving birth without having their labour induced, having an assisted vaginal birth (without the use of either forceps or vacuum extraction) or giving birth by Caesarean section. In 1999/2000 34.6% of women giving birth in Ontario hospitals fit this description. This rate has decreased steadily. In 2003/04, the rate had decreased to 31.5%.

Ministry of Health and Long-Term Care

Ministère de la Santé et des Soins de Longue Durée

1 Erie St. Clair / Erié St. Clair
2 South West / Sud-Ouest
3 Waterloo Wellington
4 Hamilton Niagara Haldimand Brant
5 Central West / Centre-Ouest
6 Mississauga Halton
7 Tornto Central / Toronto-Centre
8 Central / Centre
9 Dentral East / Centre-Est
10 South East / Sud-Est
11 Champlain
12 North Simcoe Muskoka / Simcoe-Nord Muskoka
13 North-East / Nord-Est
14 North West / Nord-Ouest

Ministry of Health and Long-Term Care Ministere de la Sante et des Soins de Longue Duree



1 Erie St. Clair / Erie St. Clair
2 South West / Sud-Ouest
3 Waterloo Wellington
4 Hamilton Niagara Haldimand Brant
5 Central West / Centre-Ouest
6 Mississauga Halton
7 Toronto Central / Toronto-Centre
8 Central/Centre
9 Central East / Centre-Est
10 South East / Sud-Est
11 Champlain
12 North Simcoe Muskoka / Simcoe-Nord Muskoka
13 North-East / Nord-Est
14 North-West / Nord-Ouest

2. Live Births

During the six years from 1997 to 2002, the number of live births in Ontario declined from 134,791 per year to 129,752. The birth rate (expressed as the number of live births per 1,000 girls and women aged 15 to 49 years of age) also decreased from 43.9/1,000 to 41.4/1,000 during that time. There were increases in both the number of births (133,546) and the birth rate (42.2) in 2003.

In 2003, women living in Central West LHIN were most likely to give birth (52.6/1,000), while women living in the North East LHIN were least likely to give birth (36.9/1,000).

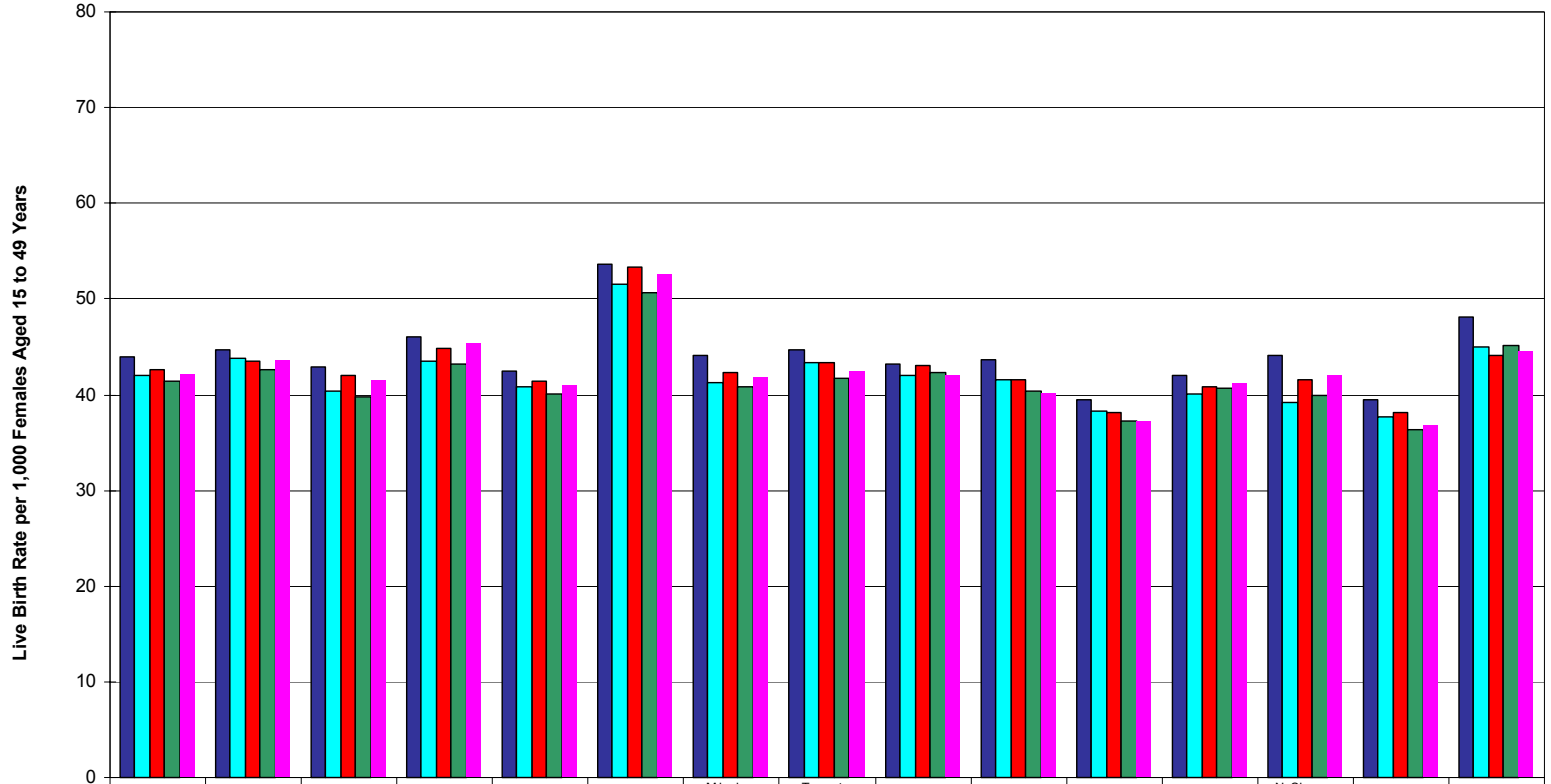
In 2003, women in Ontario were about as likely to give birth as were women in Canada as a whole. The crude birth rate (expressed as live births per 1,000 population) was 10.7 for Ontario and 10.6 for Canada[1].

Women in Ontario, like other Canadian women, are delaying childbirth[2]. The average age of a woman giving birth in Ontario in 2003 was 29.8; for all Canadian women, the average age was 29.1[1].

Teenage pregnancies have been associated with adverse outcomes for both mothers and babies[2] and with long term social and economic consequences for young mothers and their babies. It is therefore noteworthy that Ontario teens were less likely to give birth than were other Canadian teens[2] . (See chart below.)

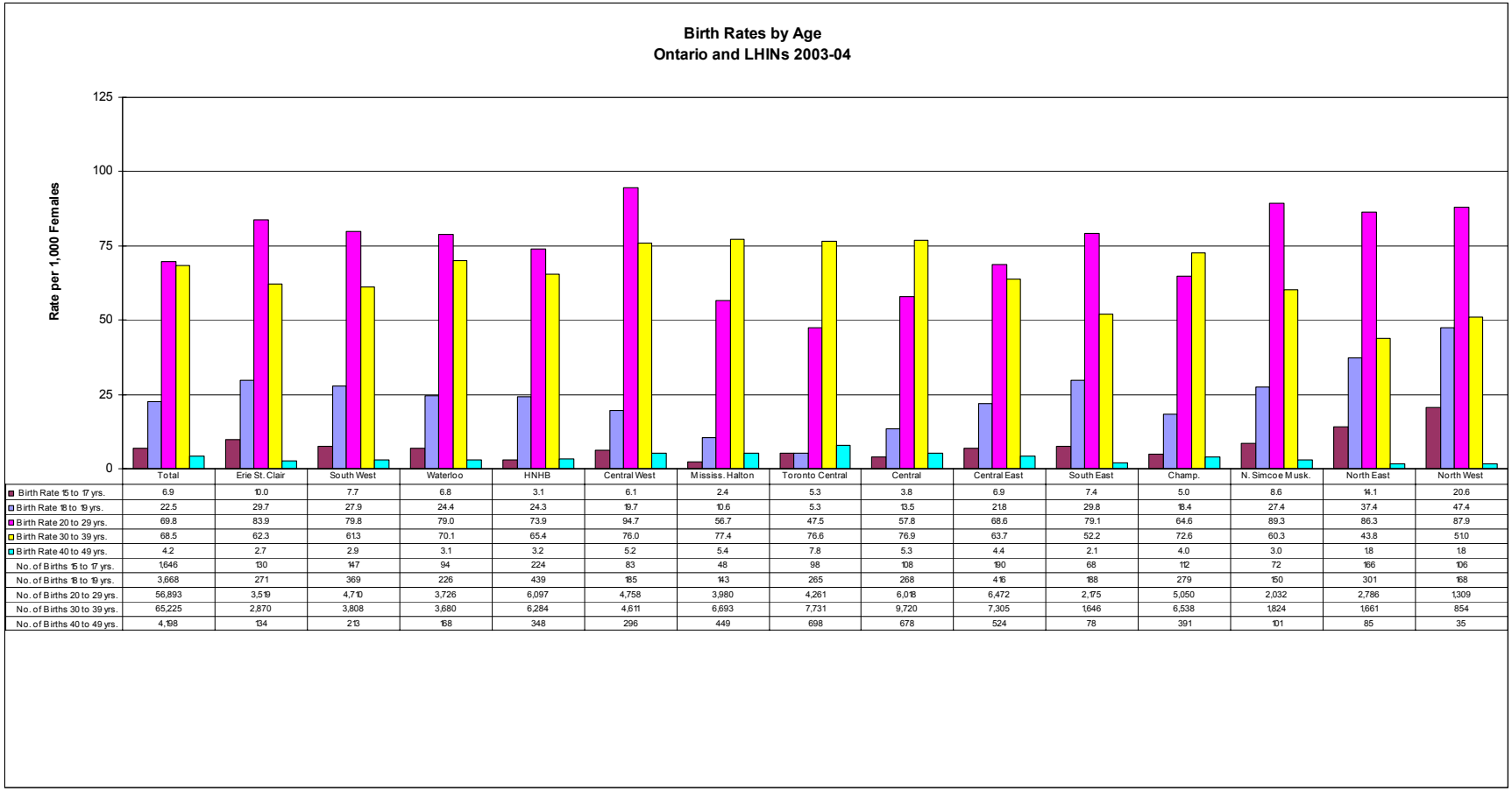
Older mothers and their babies are also at increased risk adverse outcomes. Recent evidence suggests that these can be reduced with prudent health behaviours and good quality health care during pregnancy[2]. In 2003, 20% of Ontario births, compared to 17% of all Canadian births, were to women aged 35 years of age and older. In that same year, 3.4% of Ontario births, and 2.7% of all Canadian births, were to women aged 40 years and older.

Live Births and Live Birth Rates - Ontario and LHINs (of Maternal Residence)
1999/2000 to 2003/04



	Total	Erie St. Clair	South West	Waterloo	HNHB	Central West	Mississ. Halton	Toronto Central	Central	Central East	South East	Champ.	N. Simcoe Musk.	North East	North West
Rate 1999	43.9	44.7	42.9	46.0	42.5	53.7	44.1	44.6	43.2	43.7	39.5	42.0	44.1	39.4	48.1
Rate 2000	42.0	43.8	40.4	43.6	40.8	51.6	41.3	43.4	42.0	41.5	38.3	40.1	39.2	37.7	45.0
Rate 2001	42.7	43.6	42.1	44.8	41.4	53.4	42.4	43.3	43.1	41.5	38.2	40.8	41.6	38.1	44.1
Rate 2002	41.4	42.6	39.8	43.1	40.0	50.7	40.8	41.7	42.3	40.3	37.2	40.7	39.9	36.3	45.2
Rate 2003	42.2	43.7	41.5	45.4	41.0	52.6	41.9	42.5	41.9	40.2	37.3	41.3	42.0	36.9	44.6
Births 1999	131,710	6,978	9,576	7,684	13,651	9,129	10,667	13,570	15,570	15,672	4,389	12,231	4,041	5,768	2,784
Births 2000	127,470	6,888	9,057	7,423	13,256	8,975	10,234	13,245	15,594	15,066	4,266	11,850	3,698	5,410	2,508
Births 2001	131,696	6,913	9,463	7,752	13,540	9,574	10,795	13,473	16,539	15,296	4,259	12,239	4,007	5,388	2,458
Births 2002	129,752	6,815	9,002	7,570	13,188	9,427	10,798	13,083	16,832	15,025	4,183	12,312	3,929	5,065	2,523
Births 2003	133,546	7,014	9,398	8,032	13,595	10,064	11,460	13,254	17,086	15,111	4,195	12,547	4,223	5,082	2,485

Notes: Births to women with unknown postal codes have been excluded.
Births to North West Ontario women, taking place in Manitoba have been included.



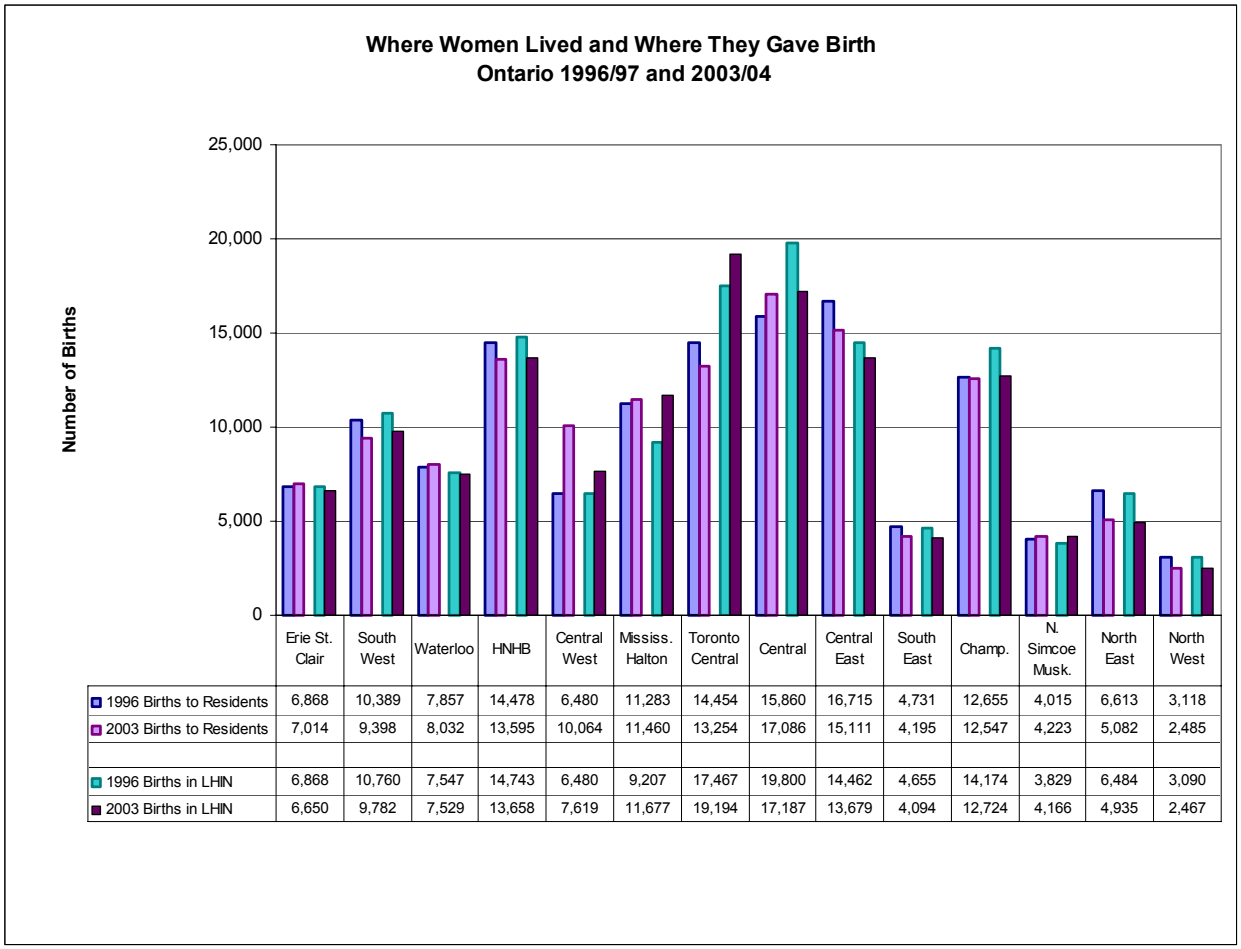
	Total	Erie St. Clair	South West	Waterloo	HNHB	Central West	Mississ. Halton	Toronto Central	Central	Central East	South East	Champ.	N. Simcoe Musk.	North East	North West
Birth Rate 15 to 17 yrs.	6.9	10.0	7.7	6.8	3.1	6.1	2.4	5.3	3.8	6.9	7.4	5.0	8.6	14.1	20.6
Birth Rate 18 to 19 yrs.	22.5	29.7	27.9	24.4	24.3	19.7	10.6	5.3	13.5	21.8	29.8	18.4	27.4	37.4	47.4
Birth Rate 20 to 29 yrs.	69.8	83.9	79.8	79.0	73.9	94.7	56.7	47.5	57.8	68.6	79.1	64.6	89.3	86.3	87.9
Birth Rate 30 to 39 yrs.	68.5	62.3	61.3	70.1	65.4	76.0	77.4	76.6	76.9	63.7	52.2	72.6	60.3	43.8	51.0
Birth Rate 40 to 49 yrs.	4.2	2.7	2.9	3.1	3.2	5.2	5.4	7.8	5.3	4.4	2.1	4.0	3.0	1.8	1.8
No. of Births 15 to 17 yrs.	1,646	130	147	94	224	83	48	98	108	190	68	112	72	166	106
No. of Births 18 to 19 yrs.	3,668	271	369	226	439	185	143	265	268	416	188	279	150	301	168
No. of Births 20 to 29 yrs.	56,893	3,519	4,710	3,726	6,097	4,758	3,980	4,261	6,018	6,472	2,175	5,050	2,032	2,786	1,309
No. of Births 30 to 39 yrs.	65,225	2,870	3,808	3,680	6,284	4,611	6,693	7,731	9,720	7,305	1,646	6,538	1,824	1,661	854
No. of Births 40 to 49 yrs.	4,198	134	213	168	348	296	449	698	678	524	78	391	101	85	35

Notes:
This chart includes only Ontario women who gave birth in Ontario. In 2003, there were 202 women from North West Ont. who gave birth in Manitoba. This chart excludes women whose postal codes were not known, girls who gave birth at less than 15 years of age (n=26) and women over 49 years of age (n=1).

3. Traveling to Give Birth

Some birthing women leave their LHINs (whether by choice or by necessity) to give birth. The chart below shows the number of birthing women in each LHIN, and the number of births that took place in that LHIN, for the two years 1996/97 and 2003/04.

Over 19,000 births (14% of all Ontario births) took place in the Toronto Central LHIN, which was home to only 10% of birthing women.



	Erie St. Clair	South West	Waterloo	HNHB	Central West	Mississ. Halton	Toronto Central	Central	Central East	South East	Champ.	N. Simcoe Musk.	North East	North West
1996 Births to Residents	6,868	10,389	7,857	14,478	6,480	11,283	14,454	15,860	16,715	4,731	12,655	4,015	6,613	3,118
2003 Births to Residents	7,014	9,398	8,032	13,595	10,064	11,460	13,254	17,086	15,111	4,195	12,547	4,223	5,082	2,485
1996 Births in LHIN	6,868	10,760	7,547	14,743	6,480	9,207	17,467	19,800	14,462	4,655	14,174	3,829	6,484	3,090
2003 Births in LHIN	6,650	9,782	7,529	13,658	7,619	11,677	19,194	17,187	13,679	4,094	12,724	4,166	4,935	2,467

Notes:
Only births to Ontario mothers are included.
Women whose postal codes were not known have been excluded from "Births to Residents".

Women in certain regions of Ontario are more likely to have traveled far distances in order to give birth. For some this was a matter of choice. For others, it reflects a lack of services near their home communities.

For the purposes of this Report, we have defined "reasonable" distances for travel to give birth as 30 km for women living in LHINS 1 through 12 and 80 km for women living in LHINS 13 and 14 (North-West and North-East Ontario). The table below shows the percentage of women living in each LHIN who gave birth within a "reasonable distance" from their home. It also shows the average distance traveled by women in each LHIN.

Women in the North-West and South East LHINS were most likely to have traveled more than a reasonable distance in order to give birth. Women in the North-West LHIN traveled the furthest to give birth, on average 83 kilometres.

Maternal LHIN		% Within Reasonable Distance	Mean Distance Traveled (km)
1	ERIE ST. CLAIR	86.4%	15.7
2	SOUTH WEST	79.1%	18.8
3	WATERLOO WELLINGTON	91.1%	11.5
4	HAMILTON NIAGARA HALDIMAND BRANT (HNHB)	92.7%	11.2
5	CENTRAL WEST	93.0%	11.9
6	MISSISSAUGA HALTON	95.5%	9.9
7	TORONTO CENTRAL	99.5%	6.0
8	CENTRAL	95.8%	11.8
9	CENTRAL EAST	90.3%	12.8
10	SOUTH EAST	74.0%	24.0
11	CHAMPLAIN	85.3%	15.9
12	NORTH SIMCOE MUSKOKA	85.6%	16.6
13	NORTH-EAST	89.6%	35.7
14	NORTH-WEST	75.1%	83.3
	TOTAL	90.4%	15.0

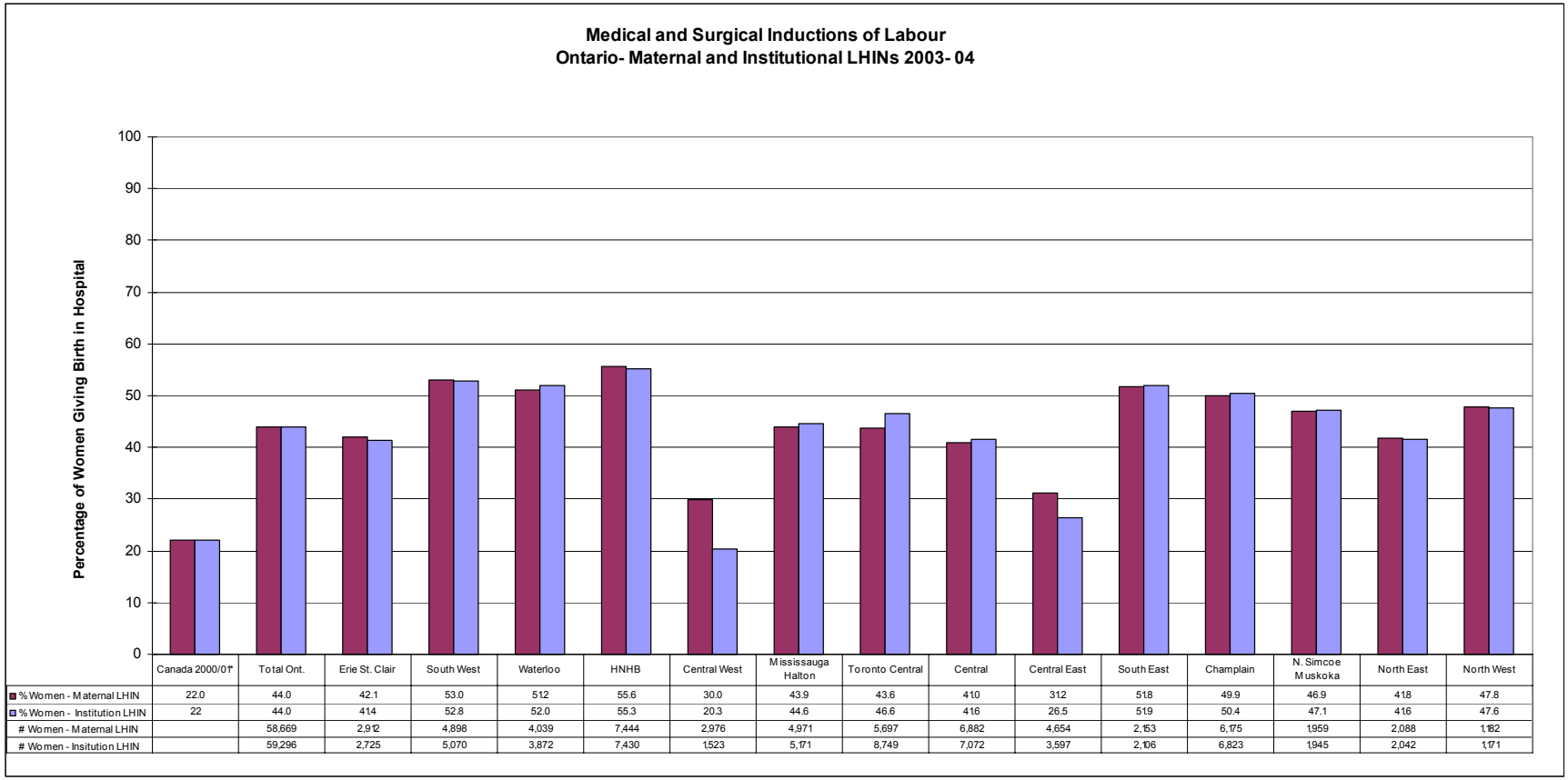
4. Health Services

Labour Induction

Induction of labour includes both medical induction and surgical induction (artificial rupture of membranes – AROM). Induction of labour has increased markedly in Ontario, Canada and the US since 1990 . In 2000/01 22% of Canadian women (excluding those in Nova Scotia, Manitoba and Québec) had their labours induced, up from 16.5% in 1991/92[2].

> *Induction of labour is an obstetric intervention associated with increased complications compared with spontaneous labour. These include an increased incidence of chorioamnionitis and an increased rate of Caesarean delivery. In certain situations, the risks of continuing pregnancy for either mother or fetus will outweigh the risks associated with induction. Indications for labour induction include pre-labour rupture of membranes, maternal hypertension, non-reassuring fetal status and post-term gestation.* (Canadian Perinatal Health Report 2003, p 29)

The most recent data for Ontario, from 2003/04 show an induction rate of 44% among women who gave birth in hospital, about twice the Canadian average. There were large regional variations in the rate of inductions. Women in Hamilton Niagara Haldimand Brant LHIN (HNHB) were most likely to have had their labour induced (55.3%); women in Central West LHIN were least likely (20.3%).



	Canada 2000/01†	Total Ont.	Erie St. Clair	South West	Waterloo	HNHB	Central West	Mississauga Halton	Toronto Central	Central	Central East	South East	Champlain	N. Simcoe Muskoka	North East	North West
% Women - Maternal LHIN	22.0	44.0	42.1	53.0	51.2	55.6	30.0	43.9	43.6	41.0	31.2	51.8	49.9	46.9	41.8	47.8
% Women - Institution LHIN	22	44.0	41.4	52.8	52.0	55.3	20.3	44.6	46.6	41.6	26.5	51.9	50.4	47.1	41.6	47.6
# Women - Maternal LHIN		58,669	2,912	4,898	4,039	7,444	2,976	4,971	5,697	6,882	4,654	2,153	6,175	1,959	2,088	1,182
# Women - Insitution LHIN		59,296	2,725	5,070	3,872	7,430	1,523	5,171	8,749	7,072	3,597	2,106	6,823	1,945	2,042	1,171

Notes:
Inductions include those that resulted in birth by Caesarean section, by assisted vaginal birth and by spontaneous vaginal birth.
"Maternal LHIN" refers to the mother's place of residence. Women from out-of-province or whose postal code was not known were excluded. Therefore, there are fewer women in this group than in the "institutional LHIN" group.
"Institutional LHIN" refers to the location of the birth.
Canada 2000 data are from Health Canada (2003), *Canadian Perinatal Health Report* and exclude Nova Scotia, Québec and Manitoba.

Caesarean Birth

Across Canada and in the U.S., Caesarean section rates have more than quadrupled, from about 5% in the late 1960s to about 20% in the 1980s. In 2000/01, 21.2% of Canadian women gave birth by Caesarean section. In 2000/01, the primary Caesarean section rate (women giving birth by Caesarean section for the first time) was 15.6%; the repeat rate (Caesarean sections among women who had had previously had a Caesarean birth) was 70.1%[2]. The World Health Organization has recommended a range of 5 to 15% of Caesarean Births as appropriate[3].

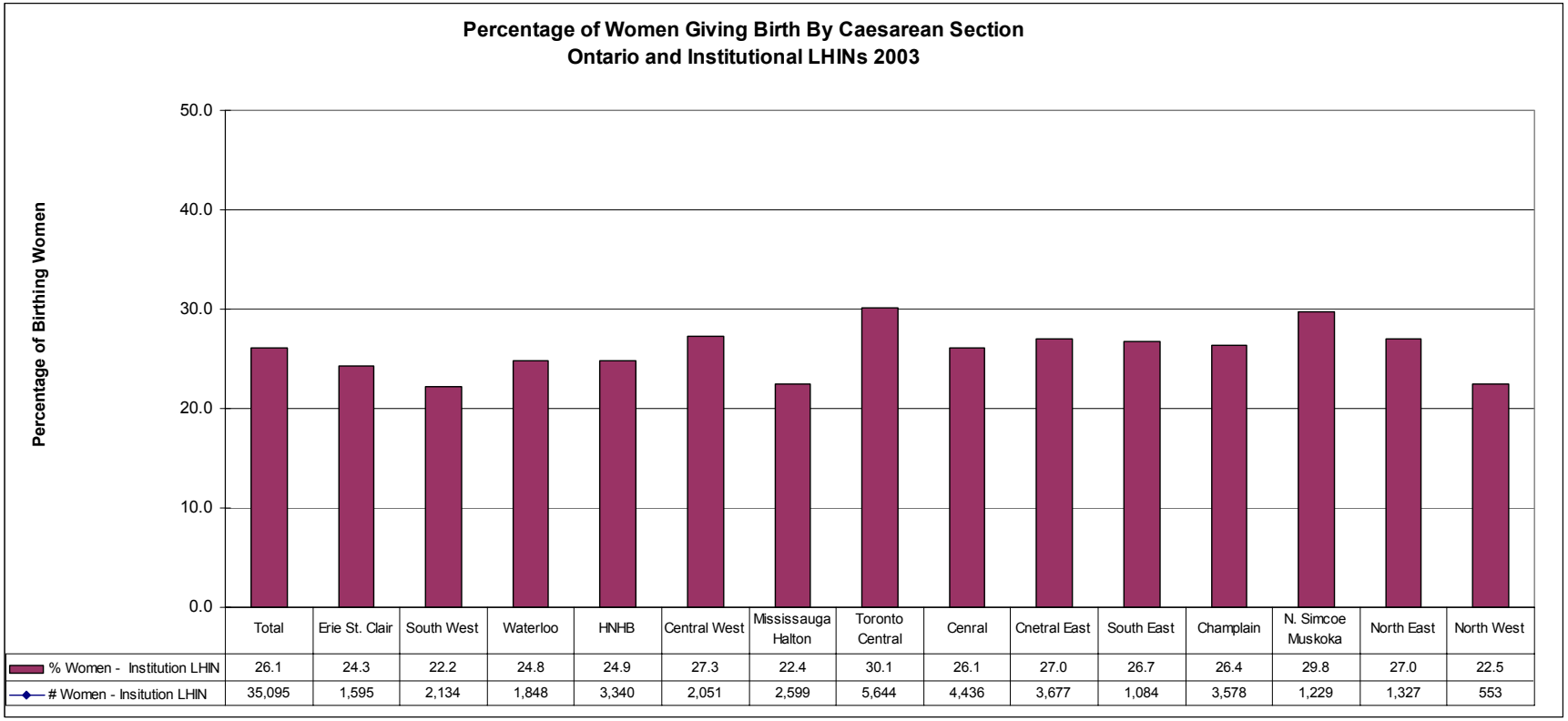
> *The factors that contributed to the increased caesarean delivery rate during the last decades are not completely understood. While the seemingly high rates continue to be of concern because of the potentially increased risks to the mother and baby and the additional costs due to longer length of hospital stay associated with cesarean delivery, the rate remained at a level of 18% to 19% for approximately 10 years, and increased in more recent years in spite of efforts to lower it.1-4 The main strategies to lower the cesarean delivery rate in Canada have been the establishment of clinical guidelines for cesarean delivery and efforts to encourage women who have had a previous cesarean delivery to attempt a vaginal delivery (or VBAC, vaginal birth after cesarean)* (Canadian Perinatal Health Report 2003, p 32)

In 2003/04, 26% of Ontario women who gave birth in hospital, had Caesarean sections. Those in Toronto Central LHIN were most likely to have a Caesarean birth (30%); those in South West LHIN were least likely (22.2%).

Ontario's increasing Caesarean section rate was the subject of a review by the Ontario Women's Health Council[4], which concluded that:

> *…it is possible for maternal/newborn programs in Ontario to maintain a low caesarean section rate over time — regardless of their size, location, the level of care they provide or the population they serve…Hospital with a low caesarean section rate have been able to achieve this goal in large part because they embrace the belief that supportive labour care and the least intervention possible create the best opportunity for a good birth experience. They have also been diligent in their efforts to set targets for caesarean section rates, monitor their progress, and assess and adjust their practices to achieve their targets.*
>
> Ontario Women's Health Council, *Attaining and Maintaining Best Practices in the Use of Caesarean Sections*, page 2

The Canadian Institute for Health Information has concluded that the average cost of a Caesarean birth in Canada is $4,600, compared to a cost of $2,700 for a vaginal birth without complicating diagnoses[5]



	Total	Erie St. Clair	South West	Waterloo	HNHB	Central West	Mississauga Halton	Toronto Central	Cenral	Cnetral East	South East	Champlain	N. Simcoe Muskoka	North East	North West
% Women - Institution LHIN	26.1	24.3	22.2	24.8	24.9	27.3	22.4	30.1	26.1	27.0	26.7	26.4	29.8	27.0	22.5
# Women - Insitution LHIN	35,095	1,595	2,134	1,848	3,340	2,051	2,599	5,644	4,436	3,677	1,084	3,578	1,229	1,327	553

Notes:
"Maternal LHIN" refers to the mother's place of residence. Women from out-of-province or whose postal code was not known were excluded. Therefore, there are fewer women in this group than in the "institutional LHIN" group.
"Institutional LHIN" refers to the location of the birth.
Canada 2001/02 data are from CIHI (2004) Giving Birth in Canada: A Regional Profile

Assisted Vaginal Births

Assisted vaginal births are births where either forceps and/or vacuum extraction were used to aid in the delivery. Reasons for the use of either forceps or vacuum extraction include the failure of labour to progress, fetal compromise, maternal heart failure or cerebral vascular malformations[3].

In Canada, in 2000–2001, forceps and/or vacuum extraction were used in 16% of hospital vaginal deliveries, down slightly from 17% in 1991–1992. During this time, forceps-assisted deliveries decreased by 45%, while vacuum extraction increased by 56%. There were large variations among health regions in the use of forceps and vacuum extraction. Regional rates varied more than eleven-fold—from 2.5 per 100 vaginal deliveries in Nunavut to 28.2 in Newfoundland and Labrador's Eastern Region[3].

In 2003/04, 11.4% of women giving birth in Ontario hospitals had assisted vaginal births. Women in the Erie St. Clair LHIN were most likely to have assisted vaginal births (14.2%); women in the North West LHIN were least likely (8.5%).

Assisted Vaginal Births (Forceps and Vacuum Extractions)
Ontario- Maternal and Institutional LHINs 2003 - 04

	Canada	Total	Erie St.	South	Waterlo	HNHB	Central	Mississauga Halton	Toronto	Centra	Central	South	Champlai	N. Muskoka	North	North
%Women - Maternal	16.	11.	14.	8.7	10.	9.8	11.	12.	12.	13.	10.	11.	11.	9.4	10.	8.5
%Women - Institution	16.	11.	14.	8.8	11.	9.5	10.	13.	11.	14.	10.	11.	11.	9.3	10.	8.5
#Women - Maternal		15,26	974	809	858	1,31	1,14	1,44	1,62	2,27	1,62	465	1,42	395	503	21
#Women - Insitution		15,39	935	843	842	1,27	81	1,53	2,21	2,41	1,42	453	1,55	382	498	21

Notes:"Maternal LHIN" refers to the mother's place of residence. Women from out-of-province or whose postal code was not known were excluded. Therefore, there are fewer women in this group than in the "institutional LHIN" group.
"Institutional LHIN" refers to the location of the hospital where the birth took place.
Canada 2001/02 data are from CIHI (2004) *Giving Birth in Canada: A Regional Profile*.

Anaesthesia During Birth

Use of anaesthesia during childbirth has increased markedly. Epidural anaesthesia is the most common. In 2001/02, 43.1% of birthing women (45.1% of those giving birth vaginally) had epidural anaesthesia. The rates varied widely across Canada, ranging from a low of 4.0% of all vaginal deliveries in the Northwest Territories to a high of 60.2% in Quebec[3].

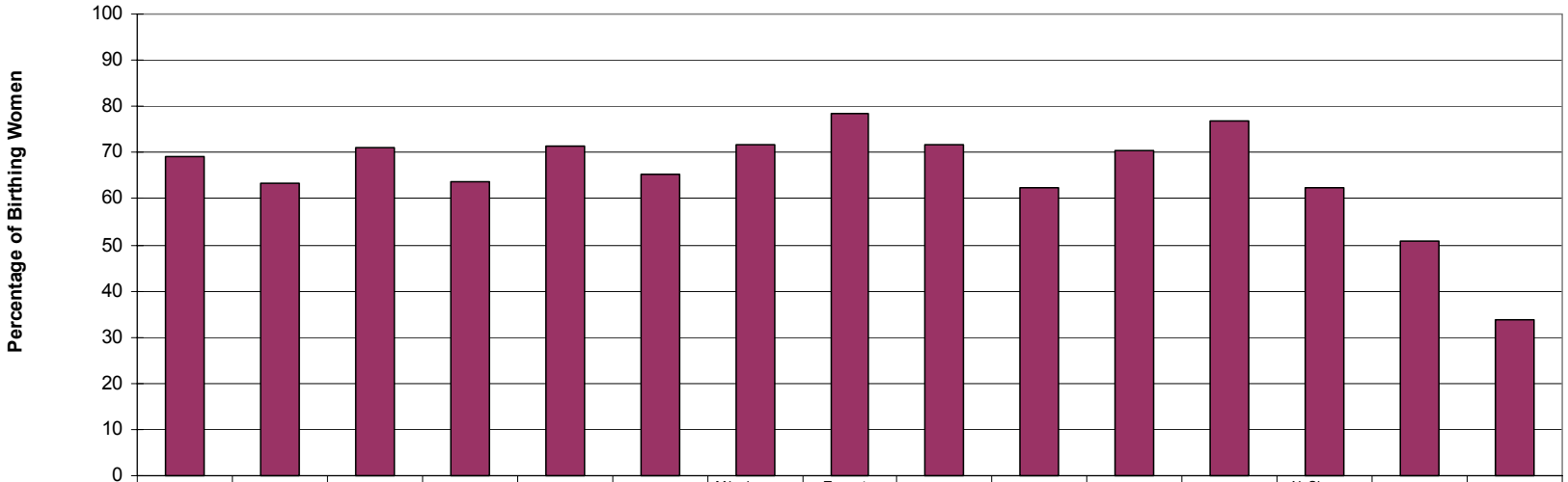
While epidural use does not increase the rate of caesarean delivery, it may lengthen the first and second stages of labour and increase the rate of assisted delivery, fetal malposition, and oxytocin use to speed up labour. As well, epidural use may be associated with drug side effects in both mothers and babies. Uninterrupted labour support from a professional or non-professional caregiver is associated with significant reductions in caesarean section delivery, assisted delivery, and use of pain medication[3].

In 2003/04, 69% of women giving birth in Ontario hospitals had anaesthesia excluding local anaesthesia). Women giving birth in Toronto Central LHIN were most likely to have had anaesthesia during birth (78.6%); women in the North West LHIN were least likely (33.7%).

CIHI has noted that:

> *A number of factors explain regional variation in rates, many of which are not well understood. Some physicians, for example, may be more likely to recommend using an epidural than others. As well, women who are giving birth for the first time, are at a later stage in life, or are Caucasian may be more likely to request an epidural. In addition, the availability of staff and resources may play a role. Because epidural service requires the skills of an anaesthesiologist (or anaesthetist), as well as resuscitation equipment and drugs, not all rural or small community hospitals offer the service. This may help to explain why in eastern and southeastern Ontario in 2003 epidurals were used in 23.6% of vaginal births in small community hospitals, but teaching and large community hospitals had rates of 65.0% and 58.7% respectively. These hospitals are more likely to have anaesthesiologists available "in house" or on call 24 hours a day.*
>
> CIHI (2004) Giving Birth in Canada: A Regional Profile page 22

Anaesthesia During Labour - By Location of Hospital
Ontario and LHINs - 2003-04



	Total	Erie St. Clair	South West	Waterloo	HNHB	Central West	Mississauga Halton	Toronto Central	Central	Central East	South East	Champlain	N. Simcoe Muskoka	North East	North West
% Women - Institution LHIN	69.1	63.4	71.1	63.6	71.3	65.1	71.6	78.6	71.8	62.3	70.6	76.8	62.3	50.8	33.7
# Women - Insitution LHIN	93,092	4,172	6,831	4,737	9,585	4,896	8,301	14,740	12,202	8,469	2,861	10,400	2,572	2,497	829

Notes:
Women from out-of-province or whose postal code was not known were excluded.
Women who received local anaesthesia only were excluded.

Women Having Spontaneous Labour and Unassisted Vaginal Births

Given the high rates of interventions described above, it was decided to examine those women who gave birth "naturally", that is, who had spontaneous labour (not induced), and who gave birth vaginally, without the use of forceps or vacuum extraction. Women who had any of the following procedures during labour were excluded from this group:

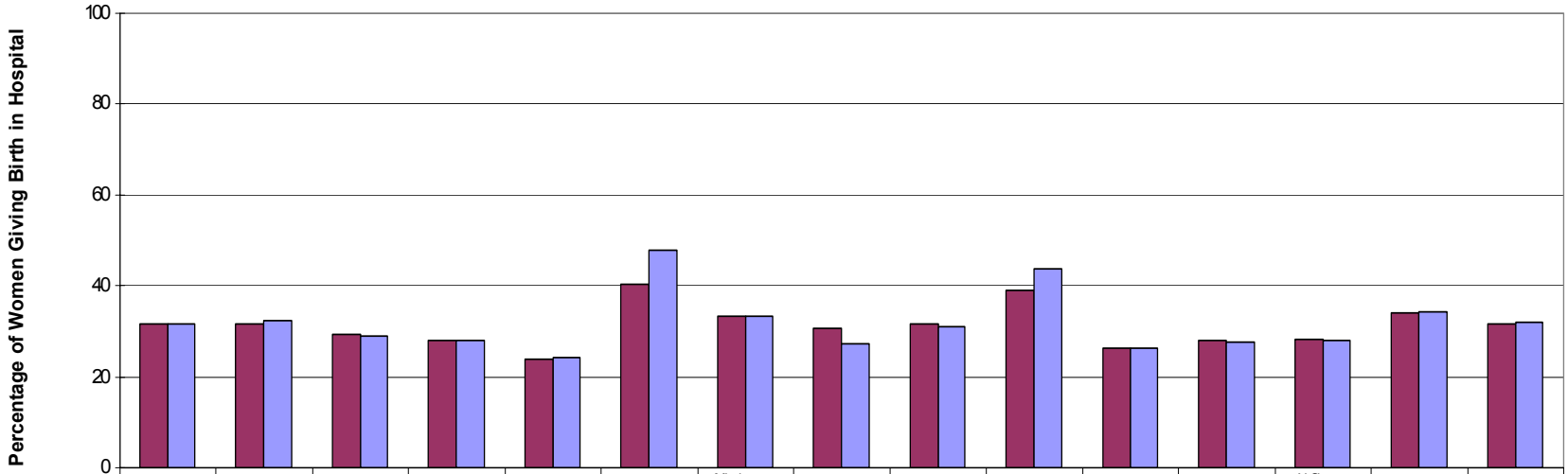
- Caesarean section
- Surgical induction of labour
- Medical induction of labour
- Assisted Vaginal birth

Note that women who had anaesthesia during labour were not excluded from this group.

In 1999/2000 34.6% of women giving birth in Ontario hospitals had a spontaneous labour and unassisted vaginal birth. This rate has decreased steadily. In 2003/04, the rate had decreased to 31.5%.

There were wide regional variations. Women giving birth in Central West LHIN were most likely to have had spontaneous labour and unassisted vaginal births (47.8%); women in the Hamilton Niagara Haldimand Brant LHIN (HNHB) were least likely (24.2%).

Women Having Spontaneous Labour and Unassisted Vaginal Births
Ontario- Maternal and Institutional LHINs 2003/04

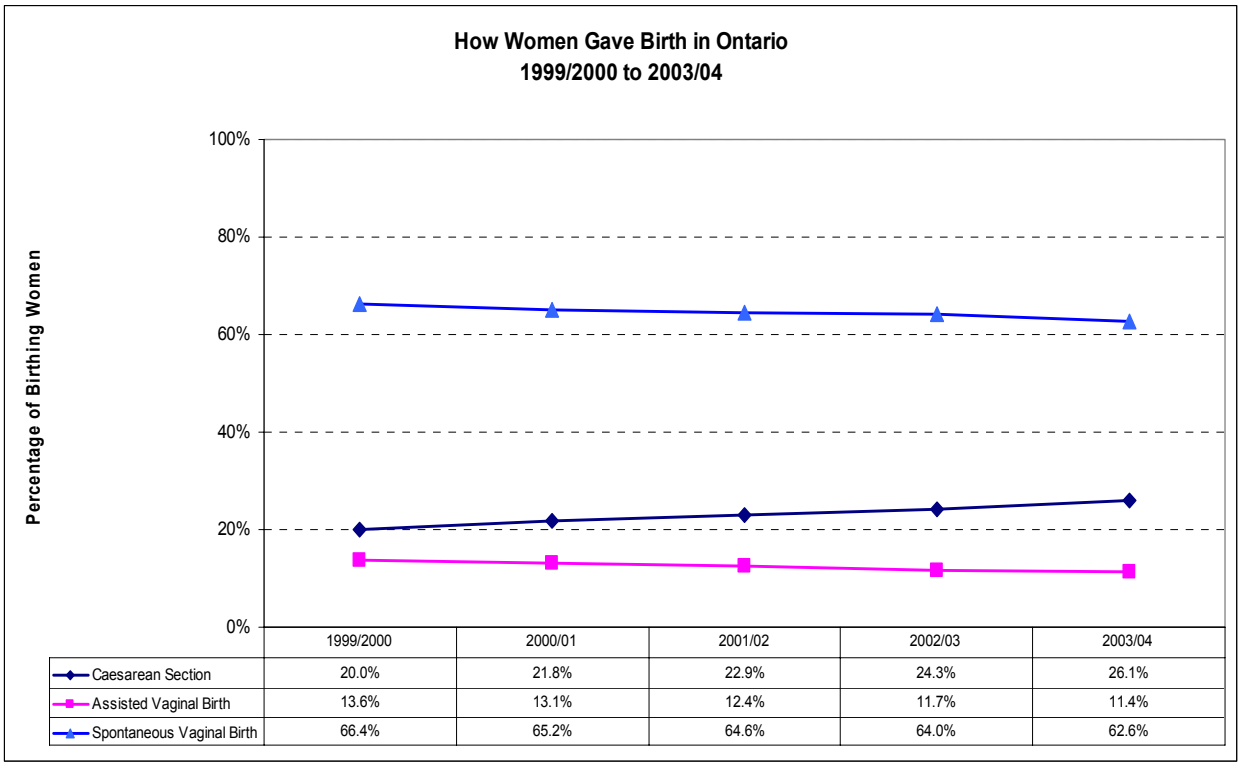


	Total	Erie St. Clair	South West	Waterloo	HNHB	Central West	Mississauga Halton	Toronto Central	Central	Central East	South East	Champlain	N. Simcoe Muskoka	North East	North West
%Women - Maternal LHIN	31.5	31.8	29.3	27.9	24.1	40.3	33.2	30.6	31.8	39.2	26.2	27.9	28.1	33.9	31.8
%Women - Institution LHIN	31.5	32.3	29.1	27.9	24.2	47.8	33.3	27.1	30.8	43.9	26.1	27.6	28.1	34.2	31.8
# Women - Maternal LHIN	42,097	2,199	2,705	2,206	3,222	4,005	3,761	3,993	5,336	5,844	1,088	3,452	1,176	1,694	786
# Women - Insitution LHIN	42,409	2,127	2,794	2,075	3,247	3,590	3,862	5,090	5,238	5,963	1,060	3,740	1,159	1,681	783

Notes:
Includes women whose labours were not induced and who had an unassisted vaginal birth.
"Maternal LHIN" refers to the mother's place of residence. Women from out-of-province or whose postal code was not known were excluded. Therefore, there are fewer women in this group than in the "institutional LHIN" group.
"Institutional LHIN" refers to the location of the birth.

How Women Gave Birth in Ontario – Five Year Trends

Analysis of data about how Ontario women gave birth over the five year period from 1999/2000 to 2003/04 shows increasing rates of Caesarean sections, decreasing rates of both assisted vaginal births and spontaneous vaginal births (vaginal births without the use of either forceps or vacuum extraction).



	1999/2000	2000/01	2001/02	2002/03	2003/04
Caesarean Section	20.0%	21.8%	22.9%	24.3%	26.1%
Assisted Vaginal Birth	13.6%	13.1%	12.4%	11.7%	11.4%
Spontaneous Vaginal Birth	66.4%	65.2%	64.6%	64.0%	62.6%

4. Maternal, Fetal and Infant Health Outcomes

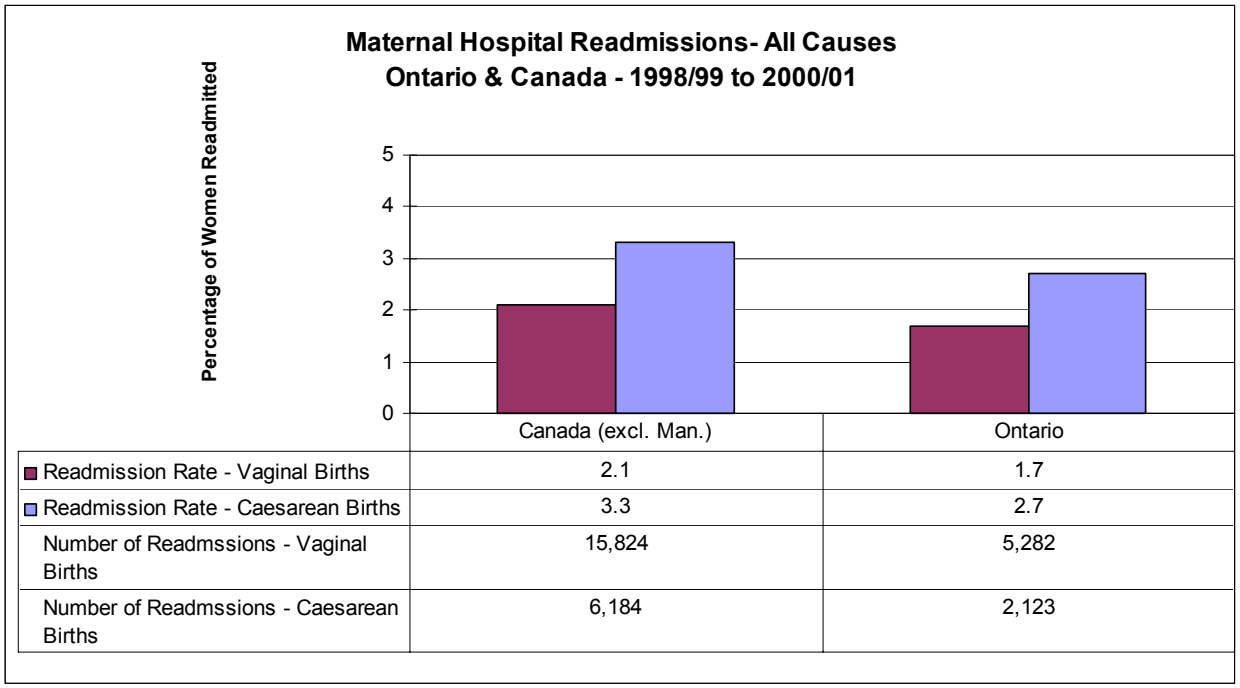
Maternal Readmission after Discharge Following Childbirth

Maternal hospital readmissions include all women, who gave birth in hospital, and were then readmitted to hospital within three months of discharge following childbirth.

During the 10 year period from 1991/92 to 2000/01, Canadian maternal readmission rates following vaginal birth remained fairly stable, ranging from 2.0% to 2.3%. During this same 10 year period, readmissions following Caesarean births increased from 2.6% to 3.4%.

> *Maternal readmission is an indicator of severe postpartum maternal morbidity. The maternal readmission rate can serve as a proxy for complications related to childbirth. Many factors influence maternal readmission rates, including the severity of illness, availability of hospital resources, distance to hospital, hospital admission policies and accessibility of outpatient services… Recent studies indicate that a short length of hospital stay following a Caesarean or assisted vaginal delivery increases the risk of maternal readmission.*
>
> Health Canada, *Canadian Perinatal Health Report, 2003*, p 67.

Data about maternal hospital readmissions were not available by LHIN. The data in the following chart are drawn Health Canada's *Canadian Perinatal Health Report 2003*[2].

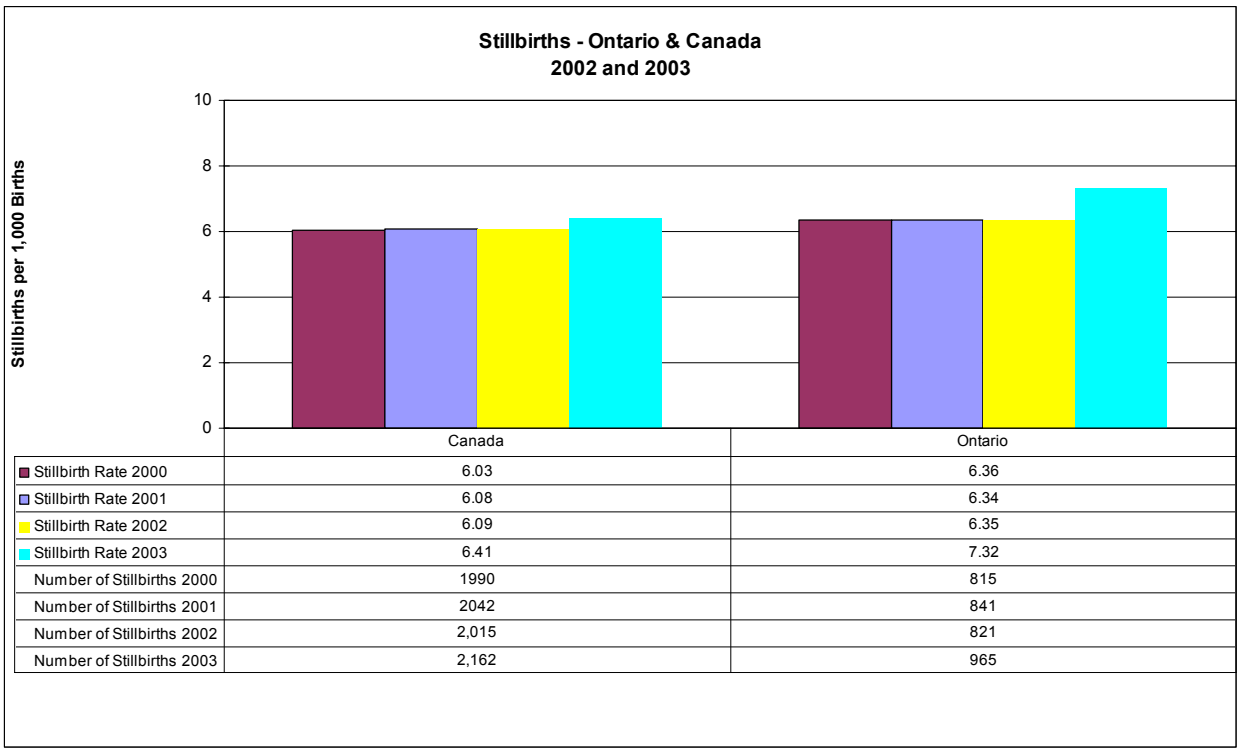


	Canada (excl. Man.)	Ontario
Readmission Rate - Vaginal Births	2.1	1.7
Readmission Rate - Caesarean Births	3.3	2.7
Number of Readmssions - Vaginal Births	15,824	5,282
Number of Readmssions - Caesarean Births	6,184	2,123

Stillbirth (Fetal Deaths)

Stillbirths are defined as infants dead at birth, with a birth weight of 500 grams or more **or** a gestational age of at least 20 weeks.[1]

From 2000 to 2003, Ontario's stillbirth rate was slightly higher than the rate for all of Canada. In a substantial number of cases, the cause of a stillbirth is unknown. Identified causes include congenital anomalies, prenatal infections and fetal growth restriction, pregnancy-related disorders such as gestational diabetes and pre-eclampsia. Known risk factors include advanced maternal age, primiparity, maternal smoking during pregnancy and high pre-pregnancy weight. Canadian fetal death rates are low compared to other countries, partly because of the increased use of obstetric intervention[2].



	Canada	Ontario
Stillbirth Rate 2000	6.03	6.36
Stillbirth Rate 2001	6.08	6.34
Stillbirth Rate 2002	6.09	6.35
Stillbirth Rate 2003	6.41	7.32
Number of Stillbirths 2000	1990	815
Number of Stillbirths 2001	2042	841
Number of Stillbirths 2002	2,015	821
Number of Stillbirths 2003	2,162	965

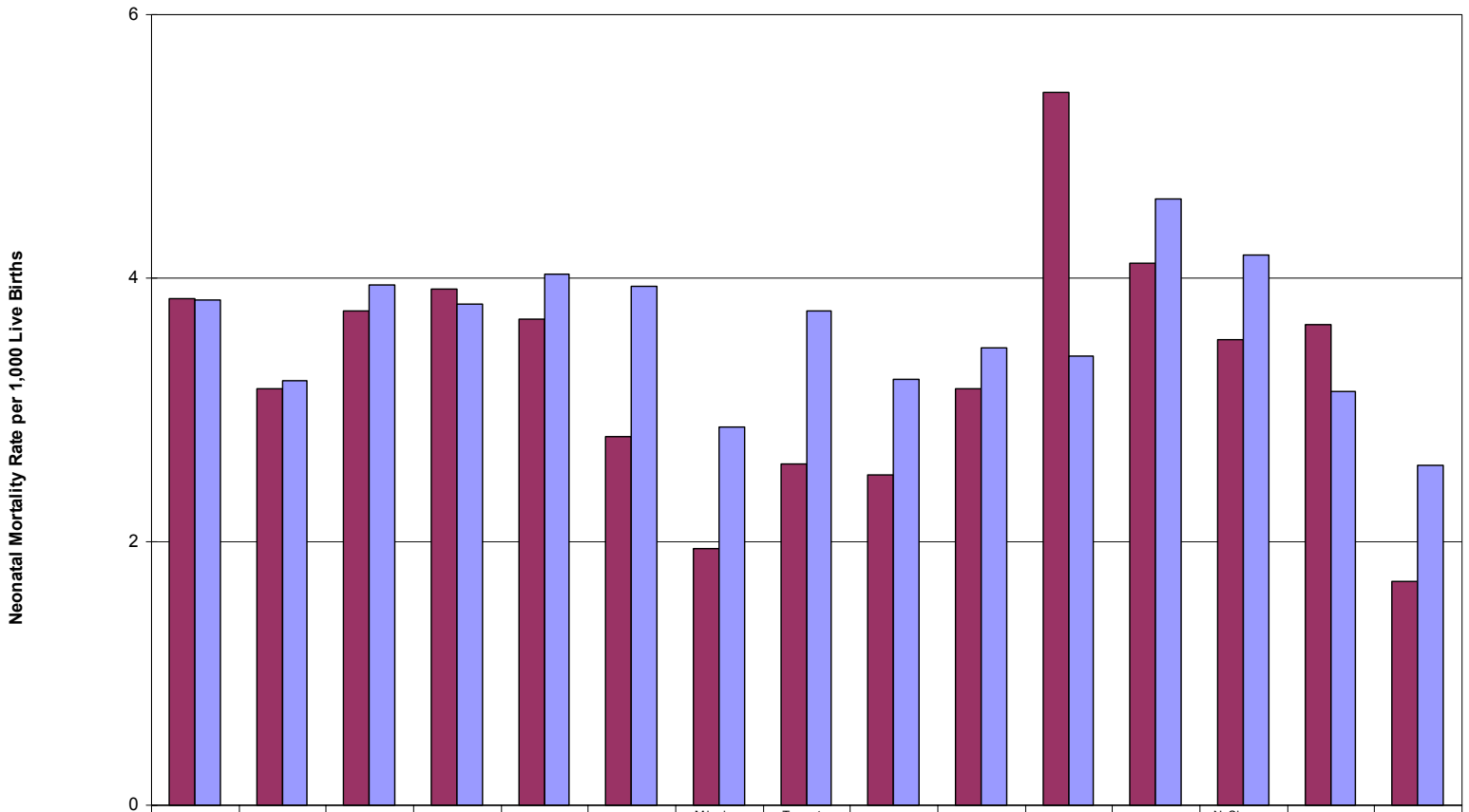
Infant Deaths

Infant mortality includes deaths of live born babies in the first year after birth. Neonatal deaths are those that occur in the first 28 days of life. Post neonatal deaths occur from 29 to 364 days of life.

From 1996 to 2001, there were fewer than 4 neonatal deaths per 1,000 live births. Ontario's rate of neonatal death was about the same as the Canadian average, which was 3.9/1,000 in 2002[6]. From 1999 to 2001, the highest rate of neonatal mortality occurred among infants born to mothers in Champlain LHIN (4.6/1,000); the lowest rate occurred among infants born to mothers in the North West LHIN (2.6/1,000).

From 1999 to 2001, there were 1.5 post neonatal deaths per 1,000 live births. Ontario's rate was the same as that for Canada as a whole[5]. The highest rate of post neonatal deaths occurred among infants born to mothers in North West LHIN (2.7/1,000); the lowest rate occurred among infants born to mothers in the Mississauga Halton LHIN (0.9/1,000).

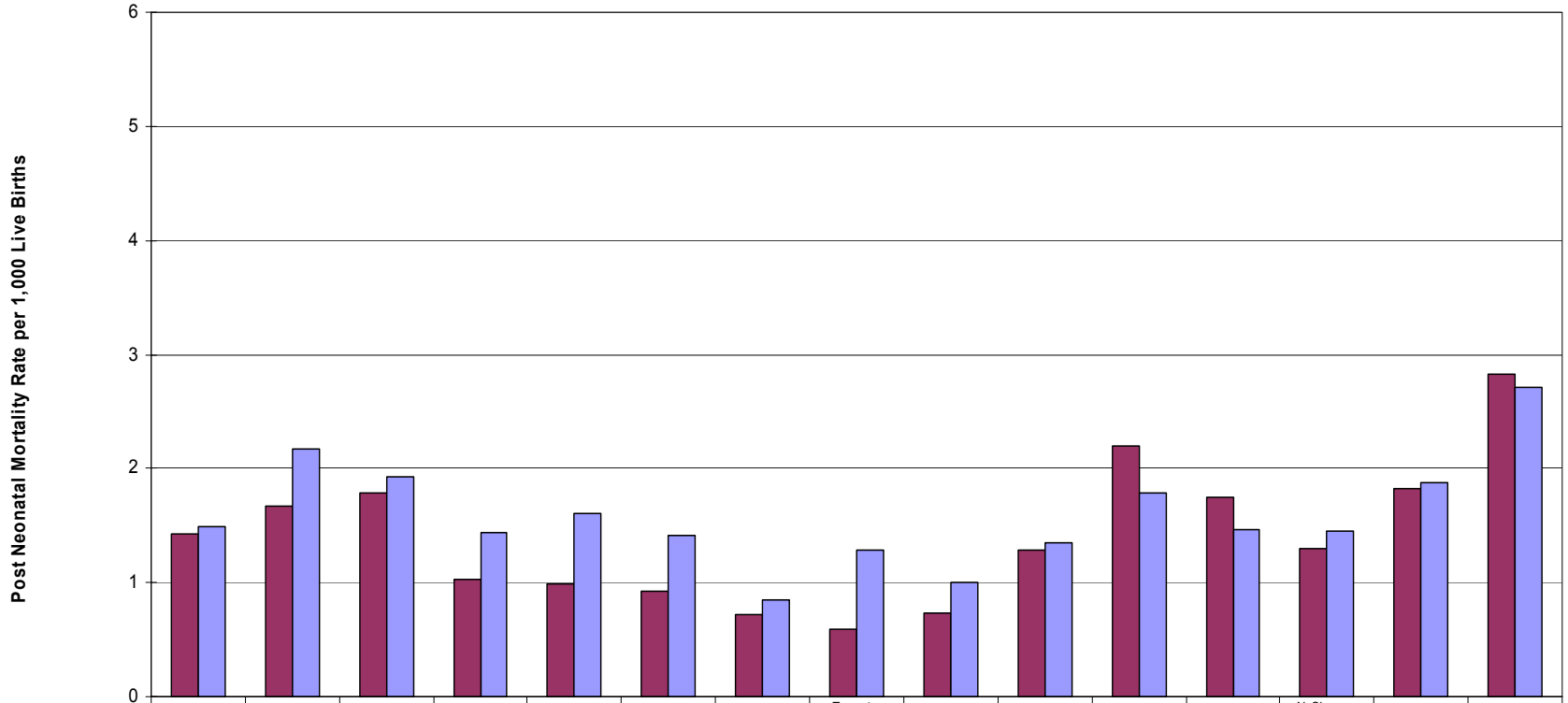
Neonatal Deaths 1996 to 1998 and 1999 to 2001
Ontario and LHINs



	Total	Erie St. Clair	South West	Waterloo	HNHB	Central West	Mississ. Halton	Toronto Central	Central	Central East	South East	Champ.	N. Simcoe Musk.	North East	North West
Rate 1996 to 1998	3.8	3.2	3.8	3.9	3.7	2.8	1.9	2.6	2.5	3.2	5.4	4.1	3.5	3.7	1.7
Rate 1999 to 2001	3.8	3.2	4.0	3.8	4.0	3.9	2.9	3.7	3.2	3.5	3.4	4.6	4.2	3.1	2.6
Number 1996 to 1998	1,573	68	113	91	156	76	65	109	117	153	74	153	41	70	15
Number 1999 to 2001	1,516	67	111	87	163	109	91	151	154	160	44	167	49	52	20

Note: Infants born to mothers from out-of-province were excluded

Post Neonatal Deaths 1996 to 1998 and 1999 to 2001
Ontario and LHINs



	Total	Erie St. Clair	South West	Waterloo	HNHB	Central West	Mississ. Halton	Toronto Central	Central	Central East	South East	Champ.	N. Simcoe Musk.	North East	North West
Rate 1996 to 1998	1.4	1.7	1.8	1.0	1.0	0.9	0.7	0.6	0.7	1.3	2.2	1.7	1.3	1.8	2.8
Rate 1999 to 2001	1.5	2.2	1.9	1.4	1.6	1.4	0.9	1.3	1.0	1.3	1.8	1.5	1.4	1.9	2.7
Number 1996 to 1998	584	36	54	24	42	25	24	25	34	62	30	65	15	35	25
Number 1999 to 2001	590	45	54	33	65	39	27	52	48	62	23	53	17	31	21

Note: Infants born to mothers from out-of-province were excluded.

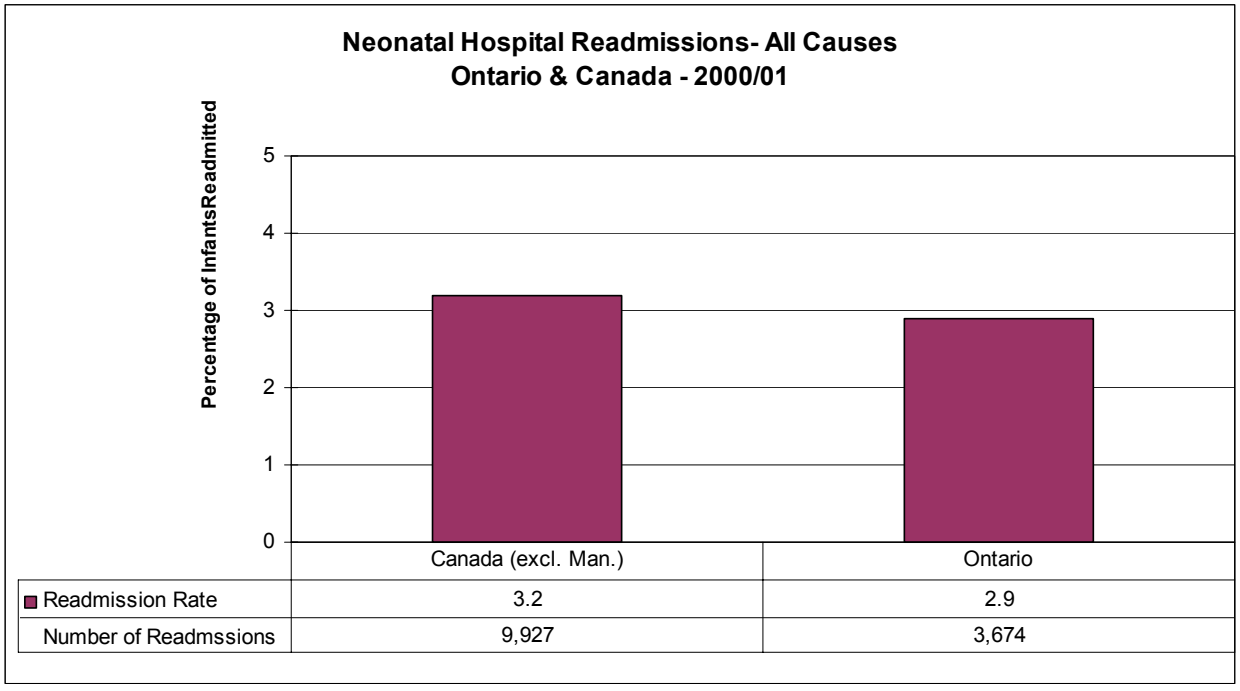
Neonatal Hospital Readmissions

Neonatal hospital readmissions are defined as the number of newborns readmitted to hospital within 28 days of birth. The rate of neonatal hospital readmissions increased in Canada from 1991/92 to 2000/01. Health Canada has concluded that, while many factors contribute to neonatal readmission, the practice of early discharge of newborns without adequate application of guidelines may be responsible for these increases[2].

> *Newborn readmission rates have been used as an outcome to evaluate the quality of perinatal health care. They are related to the length of hospital stay following birth, and they are one measure of the impact of hospital maternal and infant discharge policies. In addition, they may reflect hospital, practitioner and community approaches to monitoring and treating neonatal jaundice, and initiation and support of infant feeding.*
>
> Health Canada, *Canadian Perinatal Health Report, 2003*, p 104.

In 2000/01, Ontario's rate of neonatal hospital readmissions (2.9/1,000) was slightly lower than that for Canada as a whole (excluding Manitoba 3.2/1,000).

Data about neonatal hospital readmissions were not available by LHIN. The data in the following chart are drawn Health Canada's *Canadian Perinatal Health Report 2003*[2].



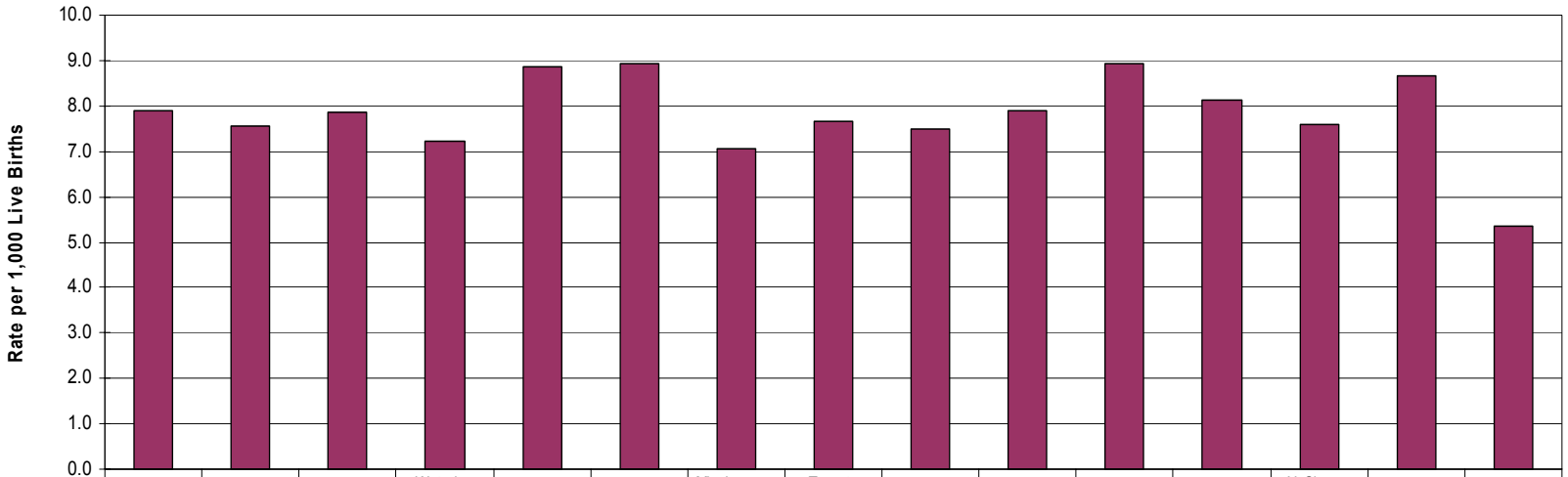
Preterm Births

Preterm birth (live birth at less than 37 weeks' gestation) is the single most important cause of perinatal mortality and morbidity in industrialized countries. The deaths of 60% to 80% of infants without congenital anomalies are related to preterm birth[2].

From 1991 to 2000, the rate of preterm births in Canada (excluding Ontario) increased from 6.6% of live births to 7.6%. During this same time Ontario's preterm birth rate increased from 6.7% to 7.3%. Some of the potential reasons for this increase include increases in obstetric intervention, changes in the frequency and gestational age of multiple births, greater likelihood of extremely early-gestation births (20-27 weeks) being registered as live births, and increases in the use of ultrasound-based estimates of gestational age[2].

In 2003/04, Ontario's preterm birth rate was 7.9%. Infants born to women living in North West LHIN were least likely to be born preterm (5.4%); those living in Central West and South East LHINs were most likely (8.9%).

Preterm Births (Gestational Age Less Than 37 Weeks)
Ontario & LHINs (of Maternal Residence) 2003



	Total Ont	Erie St. Clair	South West	Waterloo Wellington	HNHB	Central West	Mississauga Halton	Toronto Central	Central	Central East	South East	Champlain	N. Simcoe Muskoka	North East	North West
% Preterm Births	7.9	7.6	7.9	7.2	8.8	8.9	7.0	7.7	7.5	7.9	8.9	8.1	7.6	8.7	5.4
Number of Preterm Births	10,687	530	739	580	1,203	900	807	1,014	1,279	1,194	374	1,018	440	440	133

Infants born to women whose postal codes were not known have been excluded.

Infants Born Small for Gestational Age and Large for Gestational Age

Infants born small for gestational age (SGA) are those whose birth weight is below the standard 10th percentile of birth weight for gestational age expressed as a proportion of all live births (in a given place and time). This replaces the older measure "low birthweight".

Infants born large for gestational age (LGA) are those whose birth weight is above the standard 90th percentile of birth weight for gestational age expressed as a proportion of all live births (in a given place and time). This replaces the older measure "high birthweight".

Both SGA and LGA are associated with increased infant morbidity and mortality. LGA is also associated with increased maternal morbidity.

From 1991 to 2000, the SGA rate for live singleton births in Canada (excluding Ontario) decreased from 10.7% to 7.9%. Ontario's rate decreased from 11.5% to 8.5%.

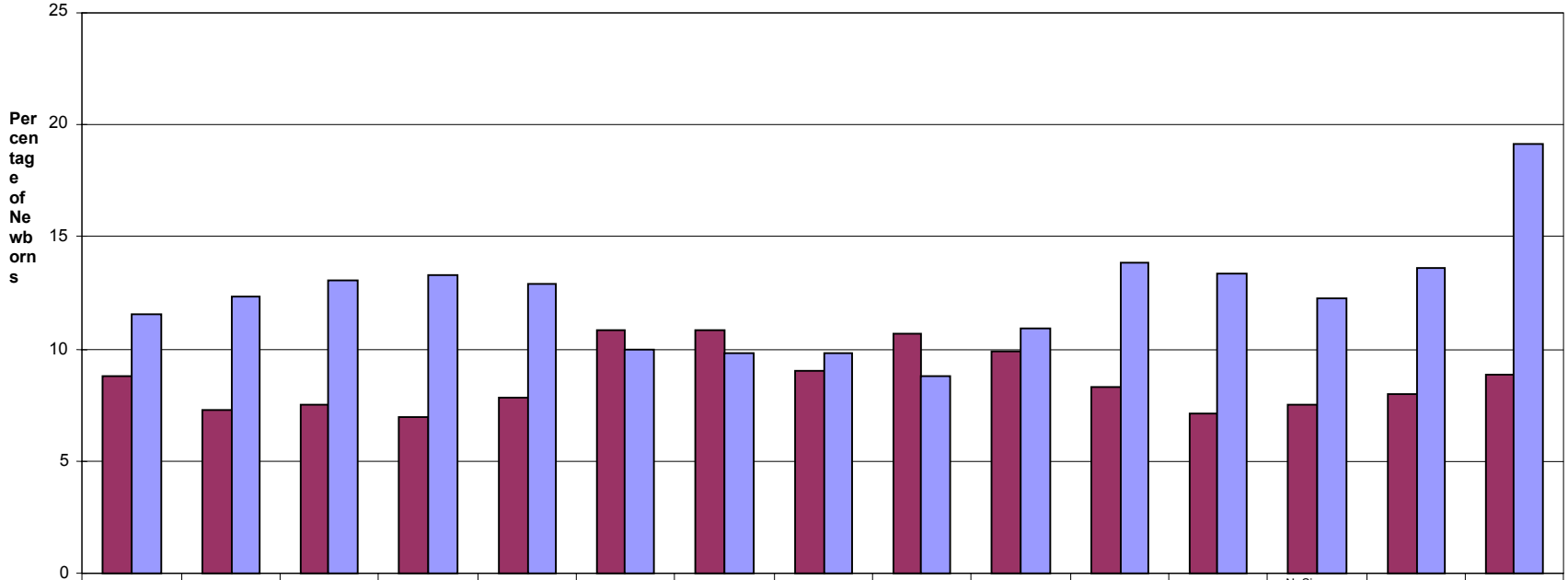
From 1991 to 2000, the LGA rate for live singleton births in Canada (excluding Ontario) increased from 9.5% to 12.0%. Ontario's rate increased from 10.1% to 12.7%.

In 2003/04, 8.8% of infants were born SGA. Infants born to mothers living in Central West and Mississauga Halton LHINs were most likely to be born SGA (10.9%); those born to mothers in Waterloo LHIN were least likely to be born SGA (7.0%).

In 2003/04, 11.5% of infants were born LGA. Infants born to mothers living in North West LHIN were most likely to be born LGA (19.1%); those born to mothers living in Central LHIN were least likely to be born LGA (8.7%).

In the following chart, those newborns who were from out of province and those whose postal codes were not known were excluded from this table. Only singleton live births were included. Cases in which sex, gestational age or weight were unknown or gestational age < 22 weeks or > 43 weeks were excluded

Small for Gestational Age (SGA) and Large for Gestational Age (LGA) Births
Ontario and LHINs - 2003



	Total *	Erie St. Clair	South West	Waterloo	HNHB	Central West	Mississ. Halton	Toronto Central	Central	Central East	South East	Champ.	N. Simcoe Musk.	North East	North West
% SGA	8.8	7.3	7.5	7.0	7.9	10.9	10.9	9.1	10.7	9.9	8.3	7.1	7.5	8.0	8.9
% LGA	11.5	12.4	13.1	13.3	12.9	10.0	9.8	9.8	8.7	10.9	13.9	13.4	12.3	13.6	19.1
SGA Births	11,467	495	677	545	1,030	1,055	1,004	1,357	1,652	1,452	338	861	308	394	144
LGA Births	15,074	834	1,183	1,033	1,685	968	1,090	1,114	1,585	1,598	562	1,618	502	673	463

Notes:
Total births include 178 SGA newborns and 150 LGA newborns who could not be assigned to a LHIN because of missing information.
Records in which gestational age, sex or weight were missing were excluded.
This includes in-province births only. In 2003-04, 202 North Western Ontario women gave birth in Manitoba.

Intrapartum Care Providers

In 2003/04, of the women who gave birth in hospital, 82% were cared for by Obstetricians, 14% by Family Physicians and 3% by Midwives. Note that where care was transferred (for example, from a midwife to an Obstetrician), then the person to whom care was transferred is counted as the responsible provider.

Ontario data, consistent with those from other provinces, show that fewer Family Physicians now provide intrapartum care. In 2001/02, 812 of 10,385 (7.8%) Ontario Family Physicians billed OHIP for attending more than one birth. By 2003/04, although the number of Family Physicians had increased to 10,615, only 731 (6.9%) billed OHIP for attending more than one birth.

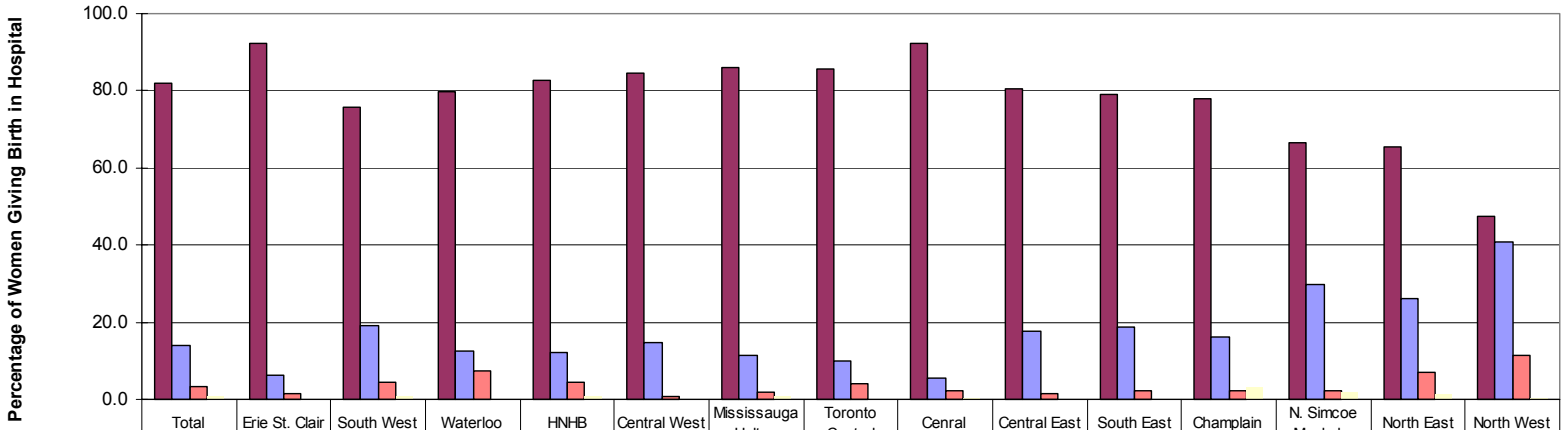
Percentage of Family Physicians Providing Intrapartum Care			
	2001/02	**2002/03**	**2003/04**
Total	7.8	7.4	6.9
Erie St. Clair	6.0	4.2	3.9
South West	13.8	12.4	11.0
Waterloo Wellington	7.6	7.1	6.5
HBHB	8.6	7.8	7.2
Central West	12.2	10.6	10.0
Mississauga Halton	4.6	4.0	4.0
Toronto Central	4.7	4.6	4.7
Central	3.6	3.3	2.9
Central East	8.1	7.5	6.6
South East	6.2	6.3	5.9
Champlain	5.2	5.3	4.9
N. Simcoe Muskoka	19.6	20.1	17.7
North East	11.7	11.2	10.9
North West	20.5	21.3	22.8

From 2001/02 to 2003/04, the percentage of Obstetrician/Gynaecologists who provided intrapartum care increased from 71.5% to 73.1%. The number of Obstetrician/Gynaecologists in Ontario also increased during this time, from 662 to 676.

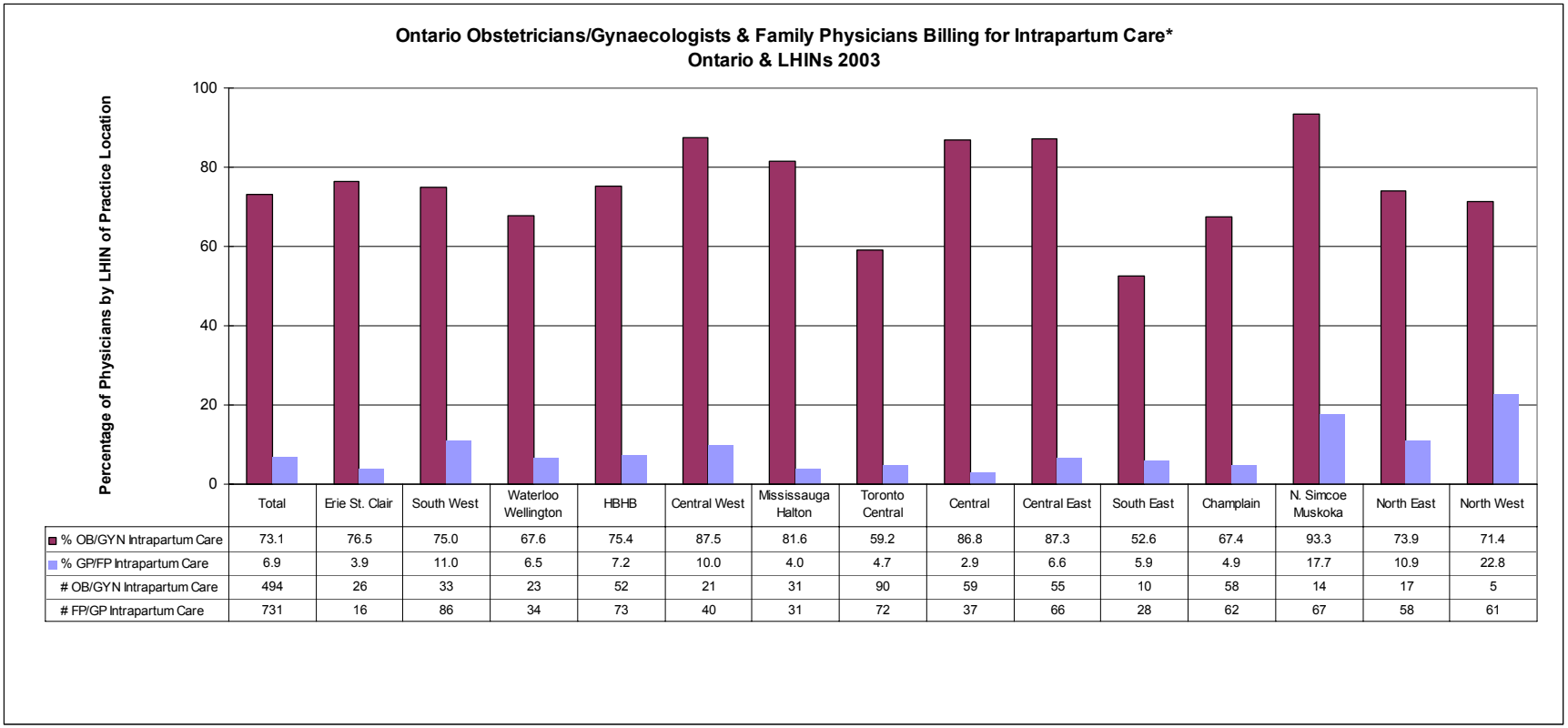
Percentage of Obstetrician/Gynaecologists Providing Intrapartum Care

	2001/02	2002/03	2003/04
Total	71.5%	72.9%	73.1%
Erie St. Clair	75.9%	80.6%	76.5%
South West	73.9%	76.1%	75.0%
Waterloo Wellington	65.6%	63.6%	67.6%
HBHB	72.6%	73.9%	75.4%
Central West	87.0%	83.3%	87.5%
Mississauga Halton	80.6%	85.3%	81.6%
Toronto Central	56.6%	54.4%	59.2%
Central	86.8%	84.7%	86.8%
Central East	90.6%	88.9%	87.3%
South East	58.8%	64.7%	52.6%
Champlain	61.4%	69.8%	67.4%
N. Simcoe Muskoka	92.3%	92.9%	93.3%
North East	70.8%	78.3%	73.9%
North West	66.7%	75.0%	71.4%

Who Attended Women Giving Birth in Hospitals
Ontario and LHINs 2003/04



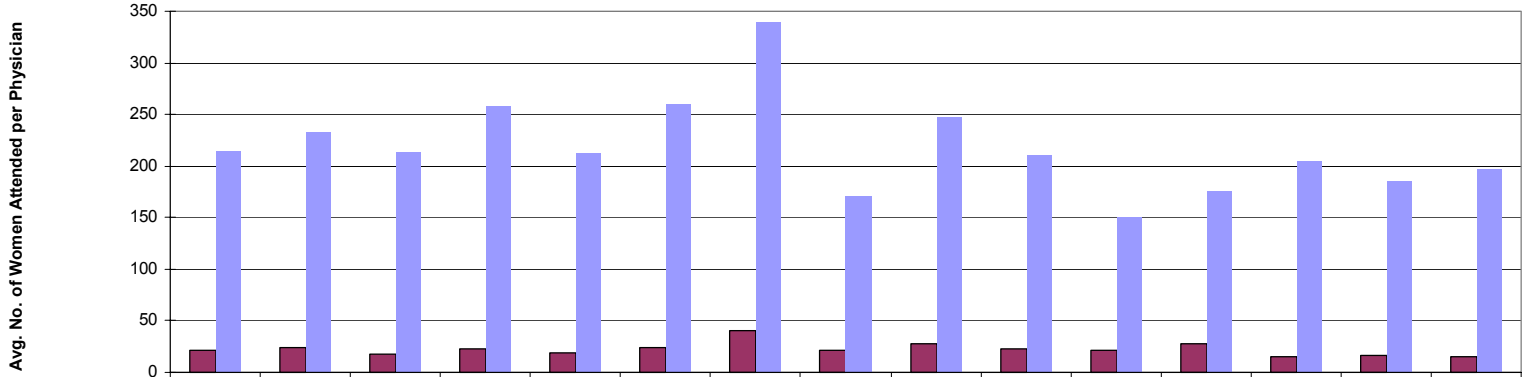
	Total	Erie St. Clair	South West	Waterloo	HNHB	Central West	Mississauga Halton	Toronto Central	Cenral	Central East	South East	Champlain	N. Simcoe Muskoka	North East	North West
% Women - OB/GYN	81.9	92.3	75.6	79.8	82.5	84.6	86.0	85.8	92.1	80.6	79.0	77.9	66.5	65.5	47.4
% Women FPs	14.1	6.4	19.3	12.6	12.3	14.7	11.3	10.0	5.5	17.7	18.9	16.4	29.6	26.2	40.9
% Women - MW	3.3	1.3	4.4	7.5	4.5	0.7	1.9	4.2	2.2	1.6	2.1	2.4	2.1	6.8	11.5
% Women - Other & Coding Errors	0.7	0.0	0.7	0.1	0.7	0.0	0.8	0.1	0.2	0.1	0.1	3.3	1.7	1.5	0.3
# Women - Obs.	110,285	6,070	7,265	5,947	11,092	6,357	9,966	16,087	15,653	10,961	3,202	10,561	2,744	3,215	1,165
# Women - FPs	18,978	418	1,850	935	1,648	1,108	1,315	1,871	930	2,408	765	2,216	1,222	1,287	1,005
# Women - Midwives	4,428	87	426	560	601	50	222	786	371	213	85	321	88	335	283
# Women - Other	937	1	67	6	97	3	89	13	36	16	3	452	72	75	7



	Total	Erie St. Clair	South West	Waterloo Wellington	HBHB	Central West	Mississauga Halton	Toronto Central	Central	Central East	South East	Champlain	N. Simcoe Muskoka	North East	North West
% OB/GYN Intrapartum Care	73.1	76.5	75.0	67.6	75.4	87.5	81.6	59.2	86.8	87.3	52.6	67.4	93.3	73.9	71.4
% GP/FP Intrapartum Care	6.9	3.9	11.0	6.5	7.2	10.0	4.0	4.7	2.9	6.6	5.9	4.9	17.7	10.9	22.8
# OB/GYN Intrapartum Care	494	26	33	23	52	21	31	90	59	55	10	58	14	17	5
# FP/GP Intrapartum Care	731	16	86	34	73	40	31	72	37	66	28	62	67	58	61

Note: Only physicians who billed for more than one delivery are included.

Ontario Obstetricians/Gynaecologists & Family Physicians
Average & Total Numbers of Birthing Women Attended
Ontario & LHINs 2003/04



	Total	Erie St. Clair	South West	Waterloo Wellington	HBHB	Central West	Mississauga Halton	Toronto Central	Central	Central East	South East	Champlain	N. Simcoe Muskoka	North East	North West
Average # of Women Attended per FP	21.3	23.8	17.8	22.5	18.4	24.4	40.6	21.4	27.8	23.0	21.6	27.5	14.6	16.7	15.6
Average # of Women Attended per OB/GYN	215.3	232.2	213.4	257.6	211.7	260.8	339.6	170.7	248.1	211.5	150.2	175.7	204.4	186.1	197.6
# of Women Attended by FPs	15,541	381	1,534	766	1,340	974	1,259	1,538	1,027	1,515	604	1,705	979	966	953
# of Women Attended by OB/GYNs	106,351	6,037	7,042	5,925	11,007	5,477	10,528	15,359	14,638	11,630	1,502	10,192	2,862	3,164	988

Note: Only physicians who billed for more than one delivery are included

.

Endnotes

[1] Statistics Canada (2005). *Births 2003*. Catalogue No. 84F0210.

[2] Health Canada (2003) *Canadian Perinatal Health Report, 2003*.
Ottawa: Minister of Public Works and Government Services Canada, 2003.

[3] Canadian Institute for Health Information (2004). *Giving Birth in Canada: A Regional Profile*

[4] Ontario Women's Health Council (2000). *Attaining and Maintaining Best Practices in the Use of Caesarean Sections: An Analysis of Four Ontario Hospitals*

[5] Canadian Institute for Health Information (2006) Giving Birth in Canada – The Costs

[6] Statistics Canada (2004). *Deaths 2002* Catalogue No. 84F0211 Vol. 2002 No. 0

Ontario Maternity Care Expert Panel
Appendix J – Glossary and Key Concepts

Aboriginal Midwives
In Ontario, there are two groups who may practice as midwives: Registered Midwives and Aboriginal Midwives. Aboriginal Midwives are exempt from regulation in Ontario and may provide services under the governance of an Aboriginal health agency or independently in Aboriginal communities.(see also Midwife)

Active Labour (see Labour)

Advanced/Acute Care Nurse Practitioner (ACNP- see also Nurse Practitioner)
ACNP's work in hospitals as part of a team under medical directives from physicians(s) to order specific tests such as laboratory, ultrasounds, x-rays and electrocardiograms when a patient is in an acute care setting they may also prescribe and give certain specific drugs in these settings**.**

Advanced Practice Nursing
This is a generic term used to describe a variety of nursing categories with advanced education, roles and responsibilities. It includes advanced care nurse practitioners, nurse practitioners, RN(EC), nurse anaesthetists, clinical nurse specialists

Advances in Labour and Risk Management (ALARM) and Advance Life Support in Obstetrics (ALSO)
ALARM is a two-day comprehensive hands-on course run by The Society of Obstetricians and Gynaecologists of Canada and open to all professionals involved in intrapartum and immediate postpartum care. The course is designed to "review, update and maintain competence in obstetrics" and those successfully completing an examination are certified in the ALARM method.

Similarly the ALSO (Advanced Life Support in Obstetrics) Provider Course is designed to assist health care professionals in developing and maintaining the knowledge and procedural skills needed to manage emergencies that can arise in obstetrical care. ALSO is owned and managed by the American Academy of Family Physicians (AAFP). In 1997, The College of Family Physicians of Canada (CFPC) became the exclusive licensed distributor of the ALSO Provider Course throughout Canada.
www.cfpc.ca/english/cfpc/cme/also

Anaesthesia/Anaesthetics/Anaesthesiologist
The word anaesthesia means loss of feeling or sensation. An anaesthesiologist is a medical specialist who is trained to give medications called anaesthetics during surgery and other medical procedures to give pain relief, a loss of sensation or loss of consciousness during the procedure. In maternity care, anaesthetists are most commonly associated with performing epidurals for pain relief in labour and providing and spinal anaesthesia for Caesarean sections. (see also analgesia)

Analgesia
Refers to medications given for pain relief. In maternity care this would specifically refer to medications given during labour and delivery or postpartum. In some cases this medication is given in a way that is under the direct control of the patient. Usually this refers to oral or intravenous medications as opposed to spinal and epidural medications

Antenatal/ Antepartum/ Prenatal Care
Ante' and 'Pre' both mean before and 'natal' and 'partum' both mean birth, so all three words refer to the period of pregnancy before a woman gives birth. OMCEP will primarily use the terms interchangeably in this report. Care in the prenatal period refers to the pregnancy care provided to a woman. This care typically involves education and health promotion around early prenatal health, screening and clinical care of the woman and fetus; and, emotional and practical support of the woman and her family. (See also Continuum of Maternity Care.)

Assisted Vaginal Birth (see Operative Vaginal Delivery)

At-Risk Delivery/Pregnancy (see Risk Status)

Augmentation
When labour has started but the woman's labour is progressing slowly, a medication called oxytocin or a procedure of rupturing the amniotic sac or 'breaking the water' can be used to try to speed up the progress.

Barriers to Care
In this report, OMCEP will use the phrases "barriers to care" or "barriers to maternity care". There are certain factors that can act as barriers to health care for all citizens. When there is a shortage of health care providers or technology these access problems are inherent barriers to care for everyone. OMCEP will also use this term to refer to the additional barriers that certain diverse populations may face because of their aboriginal status, ethnocultural needs; language; low socio-economic status; physical disabilities; mental health needs; or experience with partner abuse.

Birth Centre
A facility designed specifically to provide dedicated care to women throughout a pregnancy and during childbirth. In this report we discuss them as Centres of Excellence for Normal Birth. The centre might be freestanding or it could be co-located or affiliated with a hospital.

Caesarean Section (C-Section)
When a spontaneous vaginal birth is not possible or may cause serious risk to the woman and/or fetus, an operation known as a Caesarean Section can be performed. A surgical cut is made through the abdomen and uterus and the baby is born through that abdominal opening instead of the vagina**.**

Call Group (see On-Call Group)

Capitation
Capitation is a method of payment for primary health services that is based on a fixed fee for a bundle of health services provided to a single patient. The amount paid per person varies with the age and sex of the patient. The organization receives that payment every month even if that patient did not visit that month.

Caseload
Caseload is the term for the workload a healthcare provider or group of providers undertakes in the service of a population. In maternity care, the caseload would be the number of pregnant women or new mothers cared for by that provider and group. Often the group will work closely together according to a shared philosophy.

Clinical Nurse Specialist (CNS)
A Masters-prepared registered nurse with advanced training in a specialty area of nursing practice such as neonatal intensive care. Clinical Nurse Specialists are often recruited to nursing leadership positions in research, policy, teaching or hospital administration.

Collaboration
The word "collaboration" has many different definitions, particularly when discussing models of maternity care. OMCEP defines maternity care collaboration as a cooperative and mutually supportive relationship characterized by respect, trust, mutual support and excellent communication. Used in this way, collaboration should be an expected part of interactions between maternity providers and the women and families they serve and amongst the care providers themselves – whether those relationships are single-professional, multi-professional or inter-professional (see Team Models of Care for definitions of these terms). Collaboration is discussed further in the Models Chapter of the OMCEP Report.

Also from the Society of Obstetricians and Gynaecologists of Canada MCP^2 Project "Collaborative woman centered practice designed to promote the active participation of each discipline in providing quality care. It respects goals and values for women and their families, provides mechanisms for continuous communication among caregivers, optimizes caregiver participation in clinical decision making (within and across disciplines), and fosters respect for the contributions of all disciplines." (Based on Health Canada's definition of collaboration)
http://www.mcp2.ca/english/documents/DefnofCollabMatCare31Mar05rev24June05.pdf

Community (Three Definitions)
In this report, OMCEP may refer to a 'community' in one of three ways:

- Definition #1: A geographic area with a concentrated population identified as a neighbourhood, municipality or region. When people recommend that a woman should be able to give birth in her "community", they usually mean close to her home.

- Definition #2: Refers to health care delivered outside a hospital setting, i.e. in the community. For maternity care, this could mean services delivered in small non-institutional settings or in the home.
- Definition #3: A community can also be defined by shared traits or interests other than geography. A community could refer to people who share similar racial, cultural or ethnic backgrounds, religion, philosophical views, and many other traits. For maternity care, unique community characteristics are important because birth is usually celebrated in culturally specific ways.

Community Care Access Centres (CCACs)
In Ontario, the Ministry of Health and Long Term Services has funded CCACs across the province to give easy access to the public for key long-term health services. Most are free-standing centres in the community and a few are associated with hospitals. CCACs coordinate the following services:

- long-term care in the home;
- admissions to long-term care facilities;
- services for special needs children in schools; and,
- information and referrals to other community agencies.

Community Health Centres (CHCs)
Community Health Centres (CHCs) are community health organizations funded by the Ministry of Health and Long Term Care to provide primary health care and health promotion programs. They have independent boards of directors and their services are tailored to fit their community. CHCs provide help to individuals, families and communities. Their health promotion programs are also run in workplaces, housing developments and other community settings. Some of the services that might be offered at a Community Health Centre, depending on the need of that community, are:

- programs for youth;
- healthy sexuality programs;
- parenting education and parent-child resources and drop-ins;
- domestic violence prevention/treatment programs;
- counselling for addictions, stress and anger management and conflict resolution; etc.

Community Hospital, also known as Level I and II Hospitals (see Hospital Types)

Community Sponsored Contract (CSC)
In Ontario, the Ministry of Health and Long Term Services has identified 24 Northern Ontario communities as being underserviced by the health care system and needing at least one to two physicians. To encourage physicians to work in these underserviced areas, the Ministry provides a guaranteed salary for doctors working there, along with additional funds for evening, overnight and weekend work and for being on-call for emergencies.

Congenital Anomaly or Abnormality
'Congenital' means that something exists at the point of birth or before. An 'anomaly' is something that appears different from what is normal or expected. A congenital anomaly is a birth defect that can be seen in the developing fetus in the uterus or is discovered at birth. The cause could be something that is inherited from one or both parents or something that happened to the developing fetus because of its unique environment, such as an infection in pregnancy that causes birth defects.

Consumer (see Woman)

Continuity of Care and Related Terms
There are many definitions of continuity of care. OMCEP's definitions are provided below and a full discussion of continuity of care issues can be found in the description of OMCEP's guiding principles.

Continuity is the result of a combination of adequate access to care for patients, good inter-personal skills; good information flow and uptake between providers and organizations; and good care coordination between providers to maintain consistency. For patients, it is the experience of care as connected and coherent over time. For providers, it is the experience of having sufficient information and knowledge about a patient to best apply their professional competence and the confidence that their care is recognized and pursued by other providers.

Continuity of Carer: This term refers to the "relational continuity" that is achieved with a woman sees the same care provider through pregnancy, labour birth and the postpartum period. In this report, OMCEP will use the terms 'continuity of carer' or 'continuity of provider' when referring to models of care that use a single provider across a woman's pregnancy and the term 'continuity of care' when more than one provider or organization is involved.

Continuity of Care: This term relates to the degree to which a woman receives continuous personalized care across her pregnancy, labour, birth and postpartum period. The key elements of continuity of care are based on "information" and "management" continuity. These terms are described more fully in the guiding principles section of the OMCEP report and include:

- a maternity plan based primarily on the needs of the woman and her family;
- coordinated and integrated care across all providers;
- accessible and timely care;
- seamless transitions from one service to another; and,
- respectful relationships between the woman and her providers and among the providers themselves.

Continuum of Maternity Care
The continuum of maternity care represents a timeframe of approximately one-year. It begins with preconception counselling and includes prenatal care, care throughout a woman's pregnancy, labour and birth – called intrapartum care – and then care for the woman and her newborn until 6-8 weeks postpartum. This continuum employs the following terms:

Preconception Counselling → Prenatal Care → Intrapartum Care → Neonatal and Postpartum Care

Culturally Appropriate Care:
Culture is a complex integrated pattern of thoughts, beliefs, behaviours, customs, networks and institutions that describe a racial, ethnic, religious or social group. Culturally appropriate care is an important measurement of quality of care. It refers to a commitment to provide care to a community or population in a way that recognizes and responds to the unique cultural needs of that community. In particular, the term is used most often to describe a commitment to understand and respond to the needs of Canada's aboriginal peoples as well its many diverse ethnocultural communities. Culture may also refer to the unique views and needs of religious or social communities and to those with unique health challenges, such as those with mobility problems, hearing impairment, etc. When it comes to health care and maternity services, each cultural group or community may have its own care requirements; culturally appropriate care must be defined for each community. OMCEP has chosen the term culturally appropriate care but others may use similar terms, such as culturally sensitive care or culturally responsive care.

Determinants of Health
Key Determinants (as defined by Health Canada)
http://www.phac-aspc.gc.ca/ph-sp/phdd/determinants/index.html#key_determinants

- Income and Social Status
- Social Support Networks
- Education and Literacy
- Employment/Working Conditions
- Social Environments
- Physical Environments
- Personal Health Practices and Coping Skills
- Healthy Child Development
- Biology and Genetic Endowment
- Health Services
- Gender

Doula
A Doula is an experienced layperson that helps during childbirth by offering non-medical support during labour and birth, and sometimes by supporting a mother and child after the birth. The word is Greek in origin and means "woman caregiver of another woman" or "woman servant". A doula offers physical, emotional and social support, including assistance regarding methods of breathing, comfortable physical positions, words of comfort and encouragement, a

continuous presence of support, and other types of coaching and education. Doulas are beginning to practise in Ontario, but currently there they are an unregulated provider group. Although there are plans at the international level for recognized certification programs, there is currently no specific training, certification or regulations for doulas in Canada.

eHealth (including Electronic Health Record, Telecare, Telehealth and Teleradiology)
Adapted from Health Canada at:
http://www.hc-sc.gc.ca/hcs-sss/ehealth-esante/index_e.html

"eHealth is an overarching term used to describe the application of information and communications technologies in the health sector. It encompasses a whole range of purposes from purely administrative through to health care delivery. For example:

- within the hospital care setting, eHealth refers to electronic patient administration systems; laboratory and radiology information systems; electronic messaging systems; and, telemedicine …
- within the home care setting, examples include teleconsults and remote vital signs monitoring systems …
- within the primary care setting, eHealth can refer to the use of computer systems by general practitioners and pharmacists for patient management, medical records and electronic prescribing.

A fundamental building block of all these applications is the Electronic Health Record (EHR), which allows the sharing of necessary information between care providers across medical disciplines and institutions."

The area of eHealth is rapidly changing, as is the terminology to describe it. Some organizations refer to this new field as Telecare or Telehealth. In Ontario, Telehealth is not a generic term but rather the name of the Province's toll-free 24-hour telephone health advisory service. Teleradiology is the term used to describe a process where radiology results, such as an ultrasound, are read at a distance and the results conveyed back to a local health care provider. Teleradiology is mentioned in this document as a useful technology in prenatal care for women in rural and remote communities.

ePhysician Project
The ePhysician Project is a 3-year Ontario government initiative jointly sponsored by Ministry of Health and Long-Term Care, the Ontario Medical Association and the Ontario Family Health Network. Its role is to provide a highly integrated Information Technology (IT) environment to support primary care physicians in the timely delivery of their services. Some of the services offered include: secured electronic patient medical records that can be shared between providers or with pharmacies and labs; access to medical, scientific and technical information; medical education, professional development and other 'eLearning' programs; among other services. In 2005 the project was being tested by a group of physicians with full provincial service to be available after testing is completed.

Epidural Anaesthetic
The epidural space is located just inside the spine, close to the spinal cord in the back, and contains lots of nerve roots. Epidural anaesthetic is the name for the medical procedure where a local anaesthetic or a pain reliever is given through a special needle into the epidural space. This medication will either reduce or eliminate feeling in the lower region of the body. An epidural can be used for pain relief during the labour or birth process. Epidurals are given by anaesthesiologists or GP- anaesthetists. (see also spinal)

Episiotomy
The name of a procedure used just prior to birth where a physician or midwife makes a cut to enlarge the vaginal opening to quicken the birth of a baby.

Family Health Team (FHT), including Family Health Group (FHG) and Family Health Network (FHN)
In Ontario, the Ministry of Health and Long-Term Services (MOHLTC) is encouraging health care providers to form local Family Health Teams to ensure that primary health care is available in every community, around the clock. A Family Health Team includes family physicians and other professionals who work together in one location. Family Health Groups are also a new MOHLTC model, involving larger practices and more appointment hours, and with an after-hours telephone service, staffed by a nurse, for 24-hour coverage, seven days a week.

Family Physician (FP) and General Practitioner (GP)
A Family Physician is a generalist physician trained for at least two years after medical school in the holistic care of an individual and his/her family. Family physicians generally provide primary care and operate under the Four Principles of Family Medicine

- The family physician is a skilled clinician
- Family medicine is a community-based discipline
- The family physician is a resource to a defined practice population
- The patient-physician relationship is central to the role of the family physician

http://www.cfpc.ca/English/cfpc/about%20us/principles/default.asp?s=1

Some family physicians take on limited roles such as emergency medicine, palliative care and other practice specific functions. A 'general practitioner' has entered practice as a generalist without specialty training prior to 1994 and is not certified by the College of Family Physicians of Canada.

Family Physician (FP)-Anaesthetist or General Practitioner (GP)-Anaesthetist
Both General Practitioners and Family Physicians can take further advanced training in other specialties. One of those specialties is the use of anaesthetics during medical procedures and general surgery. In Canada, 20% of all anaesthetics are given by FP-Anaesthetists or GP-Anaesthetists, mostly in small communities and rural areas. (See also Anaesthesia and Epidural.)

Family-centred Care
Family-centred maternity and newborn care describes a process of offering maternity care that is responsive to the individual needs of the woman and her identified support system or family

members. Family-centred care is a philosophy where the physical, emotional, practical and psychosocial needs of the woman and her family guide the efforts of the maternity care providers. These principles are more fully outlined in the Health Canada document:

Family-Centered Maternity and Newborn Care: National Guidelines
http://www.phac-aspc.gc.ca/dca-dea/publications/bkgrdcon_e.html (See also Woman Centred)

Fee-for-Service (FFS)
This is the most common method of government payment to Ontario physicians, and is paid through the Ontario Health Insurance Plan (OHIP). OHIP identifies a payment for each procedure, test or visit (all are 'services'), for which the physician is entitled to bill.

Fetal Mortality/Morbidity (see also Mortality/Morbidity)
Fetal mortality refers to the death of any fetus that weighs 500g or greater or is of 20 weeks gestation or greater (≥ 500 g or ≥ 20 weeks of gestation). Fetal morbidity refers to any damage that occurs to the fetus in the uterus that is serious but does not cause death. Some examples of the serious complications which are included in fetal morbidity are: lack of oxygen leading to brain injury or mental retardation; very low birth weight; injuries during the childbirth process; side effects from maternal alcoholism, etc.

Fetus
This term refers to the unborn offspring of a mammal. In humans, the term fetus is used from the seventh or eighth week of pregnancy until the birth of the infant. 'Fetal' means referring to the fetus.

Forceps/Mid-Pelvic Forceps (see Operative Vaginal Delivery)

General Anaesthetic
An anaesthetic is any medication given by a specialist during surgery and other medical procedures to give pain relief, a loss of sensation or loss of consciousness during the procedure. A general anaesthetic is a medication strong enough to give a total loss of consciousness during an operation or other procedure.

Genetic Screening
'Genetic' refers to the genes we inherit from our biological parents, which determine our physical make up, traits and some medical conditions. The term "genetic screening" is broadly used for the process of testing individuals for inherited conditions, chromosomal and other abnormalities. It can encompass both screening tests that identify risk but not diagnose a condition, (e.g. Maternal Serum Screening (MSS)), and diagnostic tests, that indicate the presence of a condition, (e.g. amniocentesis), both of which are used to detect Down's syndrome and other chromosomal abnormalities as well as multi factorial problems such as neural tube defects.

During prenatal care genetic screening is also used to refer to testing of parents -- to see if they carry the presence or potential for any health condition that could be passed down to their children (directly or indirectly), such as cystic fibrosis, Tay-Sachs disease and haemophilia.

(See Congenital Anomaly)

Gestation/Gestation Period
Gestation means the period of development of any young mammal, from the point when the egg is fertilized until birth. In humans, the gestation period refers to the number of weeks a woman is pregnant, calculated from the first day of the woman's last normal menstrual period. The gestation period of a normal pregnancy is between 37 and 42 weeks.

Gravida
Gravida is the medical term for a pregnant woman. It can also be used to describe the number of times a woman has been pregnant. A woman who is pregnant for the first time is described as a primigravida and a woman who has been pregnant more than once as a multigravida.

Gynaecologist (see Obstetrician/Gynaecologist)

Hard Call and Soft Call (see also On-Call)
A term used mainly by family physicians to describe the workload arrangement for sharing of on-call responsibilities among members of a group and provision of 24-hour coverage. Hard Call means that each provider has designated times within which she/he is required to be on call. In a Soft Call arrangement there is still an on-call rotation with a designated person but the other care providers have the right to ask to be notified and provide care (or decline) when they are not technically the person designated to be on call.

Health

"Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."

(World Health Organization Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June, 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948. The Definition has not been amended since 1948.)

Health Professions Regulatory Advisory Council (HPRAC)

HPRAC provides independent policy advice to the Minister of Health and Long-Term Care on matters related to the regulation of health professions in Ontario.

HPRAC has a statutory mandate under the Regulated Health Professions Act (RHPA 1991). HPRAC's duties are to advise the Minister on

- Whether to regulate or de-regulate health professions
- Suggested amendments to the RHPA and related Acts and their regulations
- Matters concerning the quality assurance programs of health professional colleges
- Any matter related to the regulation of health professionals referred by the Minister

HPRAC has a statutory duty to monitor Colleges' Patient Relations Programs.

In addition, HPRAC had a statutory duty to evaluate and report within 5 years of the Act coming into force on the effectiveness of the each College's programs related to

- patient relations
- quality assurance
- complaints and discipline procedures with respect to professional misconduct of a sexual nature.

http://www.hprac.org/english/about.asp

Healthy Babies Healthy Children (HBHC)

Healthy Babies Healthy Children is a prevention/early intervention initiative designed to help families promote healthy child development and help their children achieve their full potential. This free voluntary program is offered to pregnant women and families with young children through local Public Health Units.

There are six services in all, ranging from screening and assessment of risks to healthy child development, phone contact with a Public Health Nurse within 48 hours of a newborn being discharged from hospital, followed by an offer of a home visit, and three other, more intensive services for families and children with special needs.

http://www.cfcs.gov.on.ca/CS/en/programs/BestStart/Healthy/default.htm

Home (Two definitions: having services 'close to home' and home birth)
Definition #1, 'close to home' refers to living in close proximity to health services, as in having access to maternity care in one's own community.

Definition #2, A home birth is one that takes place in a woman's home or in another home setting.

Hospital Types: Community (Level 1); Secondary (Level 2); Tertiary (Level 3)
In Ontario, hospitals that provide at least some level of maternity and newborn care are divided into three levels. The higher the level, the more that hospital is designated to care for women with complicated pregnancies and to provide care to newborns with serious health issues.

- **Level I, Community Hospitals**: These hospitals have the staff and equipment for uncomplicated full-term pregnancies but can also recognize a potential crisis or emergency that may be beyond the abilities of that hospital. If they cannot care for the pregnant woman or newborn during that emergency, staff at a Community Hospital can use a referral and transport system to a Level II or Level III hospital.

- **Level II and II+ Regional/Secondary Hospitals**: These hospitals, in addition to fulfilling care requirements of Level I facilities, have the staff and equipment for pregnancies where moderate difficulties arise for the woman or newborn. These difficulties are expected to resolve within two or three weeks. An example of where childbirth should take place in a Level II hospital is when a baby might have severe breathing problems for several hours after birth, requiring special treatment. Staff at a

Regional Hospital can use a referral and transport system to a Level III Hospital if the newborn develops health problems that cannot be treated at their hospital.

- **Level III, Tertiary Care Centres or Hospitals**: These hospitals, in addition to fulfilling care requirements of Level I and II facilities, have the staff, technology and skills to help those with significant maternal, fetal and newborn complications. This could include care to preterm or "premature" babies, particularly of 32 weeks gestation or less, and to other pregnancies and births with significant medical challenges. Services at Level III hospitals are the most advanced in the province and include intensive care or life support for preterm and seriously ill babies.

Induction (see Labour Induction)

Infant Mortality/Morbidity
Infant mortality refers to the death of a newborn who was born alive but died at any time during the first year (prior to the 364th completed day of life). Infant morbidity refers to any illness, disease or disability that occurs to a child during its first year of life that is serious but does not cause death. (See also Mortality/Morbidity)

Informed Choice
Informed choice is an active decision-making process between a provider and recipient of health services, where the recipient plays a direct role in determining the plan for care. An informed choice about any healthcare issue is based on an adequate understanding of:

- the available research, information and community standards needed to make a decision;
- including the identification of all available alternatives;
- the expected consequences of each of the alternatives, both favourable and unfavourable;
- with full support to individual choice, and without any undue control or coercion of the individual

http://www.zfcconsulting.com/webprojects/midwives/mss/home/docs/Informed%20Choice.pdf

Informed Consent
Informed consent is a legal process whereby an individual agrees to a service or treatment only after she/he has a full understanding of the facts and possible consequences of that service or treatment. The following is adapted from Ontario's "Health Care Consent Act ,1996"

http://www.e-laws.gov.on.ca/DBLaws/Statutes/English/96h02_e.htm

The are 4 elements for consent to treatment:

- the consent must relate to that treatment;
- it must be informed;
- it must be given voluntarily; and,
- it must not be obtained through misrepresentation or fraud.

Consent is informed if, before giving consent, the person receives all of the information a reasonable person in the same circumstances would require in order to make a decision and the person receives accurate responses to any request for additional information.

Integration:(Two definitions: Personal Perspective and System Perspective)
Also known as integrated care, integration is used to describe a comprehensive approach by many health care providers and organizations in the planning, coordination and delivery of health services.

Definition #1: From the perspective of a person seeking health services, integration means that the individual's needs are addressed respectfully, seamlessly and comprehensively by her one maternity care provider or by a well co-ordinated team of care providers. For example, a woman may see one midwife throughout most of her care but might also be referred to a specialist for prenatal screening who often works in partnership with the midwife. All information and decision-making is shared.

Definition #2: System integration means that all of the levels of the health care system work together, from policy, regulation and funding groups, through to all those involved in delivering the actual health services, e.g., maternity care providers. Integration should incorporate all community and institutional settings and at the regional, provincial, and (where applicable) national levels.

Inter-professional/ Inter-disciplinary Care/ Collaboration
Inter-professional care is a term used to describe models of team-based care where providers from different professions share responsibility for care for the same group of women and babies and may share on-call coverage as well. Individuals from the different professions work together, either in sequence or concurrently, to provide care to the same person or population. Usually these teams work in the same location, have a shared philosophy of care and clinical practice guidelines. There are many models of inter-professional collaboration that can enable physicians, midwives, nurses and other health care providers to work together as part of a maternity-care team. (See Team Models of Care for other related models, also Collaboration)

Intrapartum or Intrapartum Care (also known as Childbirth)
This term refers to the period during labour, childbirth, and right after the baby is born, until the placenta is expelled. In this report, OMCEP will use the term ‘maternity care’ when referring to care to a woman at any stage of her pregnancy and the term ‘intrapartum care’ when specifically discussing care during labour and on the day a woman gives birth.

Labour, including Latent and Active Labour
Labour is often divided into three stages.

- The first stage begins when a pregnant woman begins to have contractions and ends when her cervix is fully dilated, to ten centimetres. The first stage of labour can be further sub-divided between latent (early) and active labour.
- The second stage is usually characterized by the start of maternal pushing efforts and ends when the baby is born.
- The third stage begins at the moment of birth and ends when the placenta is expelled.

Labour Induction
When labour has not started but the health of the fetus or woman require the birth to take place sooner than it would on its own, medications like prostaglandins or oxytocin or procedures like rupturing the amniotic sac or 'breaking the water' can be used to try to begin the woman's entry into labour.

Lactation Consultant (LC)
A trained professional who has received education and practical experience, and passed regular competency exams on teaching breastfeeding, as certified by the International Board of Lactation Consultant Examiners. A Lactation Consultant has the skills, knowledge and attitudes to encourage breastfeeding, to teach a new mother how to breastfeed, and also how to overcome any problems when breastfeeding a newborn baby.

Latent Labour (see Labour)

Level I, II or III Hospitals (see Hospital Types)

Local Health Integration Networks (LHINs)

In 2004, Ontario formed 14 new Local Health Integration Networks (LHINs) to" allow local communities and health care providers to work together to identify local priorities, plan health services and deliver them in a more coordinated fashion. The government would continue to set strategic directions and provincial standards for high-quality, accessible health care". Each LHIN is organized around a geographic area where people naturally seek healthcare. These Networks are designed to help with health services' planning and delivery but individuals do not have to get all of their health care in the region where they live. They can cross over boundaries and choose the doctor or medical service they need

http://www.health.gov.on.ca/english/media/news_releases/archives/nr_06/mar/nr_030106.html

Low Birth Weight
A birth weight of less than 2,500 grams, or 5 pounds 8 ounces, is considered low birth weight. Low birth weight infants are at greater risk for needing special medical care and for some diseases and health problems such as breathing difficulties, problems with eyesight and learning difficulties

Managing Obstetrical Risk Efficiently (More^{OB})
Managing **O**bstetrical **R**isk **E**fficiently (MORE^{OB}) is a continuous patient safety improvement program for physicians, midwives and nurses developed through the Society of Obstetricians and Gynaecologists of Canada. It is provided within the hospital setting over a 3-year cycle and focuses on promoting a patient safety culture within a maternity care environment.

Maternal-Fetal Medicine Specialist (MFM Specialist)
A Maternal Fetal Medicine Specialist is an obstetrician-gynaecologist with an additional sub-specialty credential from the Royal College of Physicians and Surgeons in maternal-fetal medicine. An MFM specialist has the education and skills to provide care to women with

significant complications during pregnancy. An MFM specialist may provide consultation only to another care provider or may assume care of the woman. MFM specialists are involved in advanced diagnostics and the medical, obstetrical and surgical care of pregnant women and their fetuses. Most work in advanced care facilities such as Level III or Level III hospitals in Ontario.

Maternal Mortality/Morbidity
Maternal mortality is defined as the death of a woman either while she is pregnant or within 42 days of the end of the pregnancy. Maternal mortality is often divided into Direct Maternal Mortality or Indirect Maternal Mortality. Direct Maternal Mortality occurs when a woman dies as a direct result of complications from the pregnancy itself. Indirect Maternal Mortality occurs when an underlying illness or disease already present in the woman is aggravated by the pregnancy and the combination of health issues result in her death. Maternal morbidity would include any serious health problems that occur in a woman who is pregnant, or soon after the end of her pregnancy, and which have been caused at least in part by her pregnancy. (See also Mortality/Morbidity)

Maternity Care (see Continuum of Maternity Care)
A term used by all professional groups to refer to the care of pregnant woman during pregnancy and birth and care of the woman until six weeks postpartum. Midwives and nurses would usually also use this term to include care of the newborn immediately after birth and for the first weeks of life, whereas physicians may call this component "newborn care".

Midwife or Registered Midwife
In Ontario, 'Midwife' is a protected term, which is equivalent to "Registered Midwife". The practice of the registered midwife is: "the assessment and monitoring of women during pregnancy, labour, and the post-partum period and of their newborn babies, the provision of care during normal pregnancy, labour and post-partum period, and the conducting of spontaneous normal vaginal deliveries." (From the College of Midwives of Ontario, as defined in the *Midwifery Act, 1991*).

To practice in Ontario, midwives must be registered with the College of Midwives of Ontario. The only exception is for Aboriginal Midwives (see Aboriginal Midwife), who are exempt from regulation. Some aboriginal midwives also fulfill the entry to practice requirements of the College and choose to become registered midwives as well.

In Ontario, baccalaureate midwifery education programs are offered at Laurentian, McMaster and Ryerson Universities. Ryerson also offers a 1-year bridging project for midwives with non-Ontario credentials.

Ministry of Health and Long-Term Care (MOHLTC)
The name for the ministry with lead responsibility for health care issues in the Province of Ontario.

Miscarriage
The loss of a pregnancy before the fetus has reached 20 weeks gestation, also referred to as a spontaneous abortion.

Models Of Care
Models of care are ways of delivering service that are set out for each profession, potentially as guidelines for providing optimal care. They may be developed by health care providers, professional associations, agencies, institutions, by inter-professional teams or by other joint initiatives that combine the efforts of many stakeholders to create one model of care.

Mortality/Morbidity (see Health)
Mortality is the term used to refer to death. Morbidity is the term used to refer to serious injury, illness or disability. (See also Maternal Mortality or Morbidity; Fetal Mortality or Morbidity; Perinatal Mortality or Morbidity; Neonatal Mortality or Morbidity, Infant Mortality or Morbidity.)

Most Responsible Provider (MRP)
This term is often found in legal and regulatory documents, when speaking about insurance and liability, and in certain data collection systems. This term refers to the professional who has the legal responsibility for coordinating and monitoring an individual's care at a given time. The assignment of this role can change over the course of health care. If a physician or midwife sees a woman throughout her pregnancy and childbirth, that professional is the most responsible care provider for her pregnancy. The role switches if a woman is transferred to someone for labour and childbirth. During intrapartum care, that new professional, often an obstetrician, would be considered the most responsible care provider.

Multi-Disciplinary Teams (see Team Models of Care)

Multigravida
Gravida is the medical term for a pregnant woman. A woman who is pregnant and who has also been pregnant at least once before is said to be 'multigravida'.

Multip or Multipara
'Multi' means many and 'para' means to give birth. A multip or multipara is a woman who has given birth at least twice. (See also Parity)

Multiple Pregnancy and Multiple Birth
A multiple pregnancy results when more than one fetus develops as part of a single pregnancy. A multiple birth is when more than one baby is born from a single pregnancy. The most common type of multiple pregnancy is twins.

Multi-professional Care
Multi-professional care occurs when different provider groups are involved in a woman's maternity care and that care is transferred from one professional to another, usually sequentially, without them working together as a formal integrated team. (See team models of care for related definitions)

Neonatal
'Neo' means new and 'natal' means birth. The period of time from the date of birth to the first 28 days after birth is called the neonatal period.

Neonatal Unit - NICU
The Neonatal Unit is a specialized unit in a hospital with the staff, training and equipment to work with seriously ill newborns. (Also known as Special Care Nurseries.)

Neonatal Mortality/Morbidity
A neonate is a newborn baby aged 28 days or less. Neonatal mortality refers to the death of a newborn who was born alive but dies within 28 days of birth. Neonatal morbidity refers to any illness, disease or disability that occurs to a child during its first 28 days of life that is serious but does not cause death. (See also Mortality/Morbidity)

Newborn/Neonate
The general term for a baby who has just been born or is up to six weeks old. Another term for a newborn is neonate.

Niday Perinatal Database
The Niday Perinatal Database is a voluntary internet-based surveillance system that health care providers use to enter data on most babies born in Ontario. Both maternal and newborn data are captured. Hospitals and midwives enter the data on the pregnancy, the labour, the birth, the postpartum period and any complications.

http://www.pppeso.on.ca/english/niday_faqs.html

Northern Group Funding Plan (NGFP)
The Northern Group Funding Plan was created by the Ministry of Health and Long-Term Care (MOHLTC) in the Province of Ontario to create incentives for doctors to move to Northern Ontario to work. A salary is provided along with extra fees for on-call work and other special services.

Nullip or Nullipara
'Null' means zero or nothing and 'para' means to give birth. A woman is described as nullip or nullipara if she has never given birth. (See also Parity)

Nurse Midwife (see Midwife)
A term used in the United States to describe a professional who is trained as both a nurse and a midwife and has graduated from a program where a nursing credential is normally the prerequisite for midwifery education at the postgraduate level.

Nurse Practitioner (Two types: Primary Health Care Nurse Practitioner, RN (EC) or Acute Care Nurse Practitioner (ACNP))
A Nurse Practitioner is a registered nurse who has taken advance training in Primary Health Care or Acute Care and is permitted to practice according to an expanded scope. In Ontario, in 1998, the "*Expanded Nursing Services for Patients Act*" gave Nurse Practitioners the authority to:

communicate a diagnosis; order specific tests such as ultrasounds or x-rays; order electrocardiograms when a patient is not in an acute health state; prescribe and give certain specific drugs and order specific laboratory tests. Some Nurse Practitioners work in general health settings, offering either ongoing primary care or short-term acute or emergency care. Some Nurse Practitioners specialize in a specific health condition, such as diabetes; others may specialize with a specific population – such as pregnant women – or with certain communities or geographic groups – like aboriginal or rural communities. In some communities, the Nurse Practitioner may be the only health care provider who is available on an ongoing basis.

Nurse-Anaesthetist
A Nurse-Anaesthetist is a registered nurse who has taken advance training in the use of anaesthetics for pain relief. At present, this designation only exists in the United States. (See also Anaesthesia)

Obstetrics/Obstetrical Care
Obstetrics is the branch of medicine and surgery that deals with pregnancy and childbirth and specializes in dealing with maternal and fetal complications and providing consultation to care providers who specialize in normal childbirth (midwives and family physicians) when complications arise. Subspecialties of obstetrics include Maternal and Fetal Medicine. Obstetrical care in our report refers to care provided by obstetricians, but in other contexts is used synonymously with "maternity care". (See also Obstetrician/Gynaecologist)

Obstetrician/Gynaecologist
An obstetrician/gynaecologist is a physician, whose specialty is women's reproductive health care across the lifespan, including maternity care. An Obstetrician may provide maternity care for a woman from the beginning of her pregnancy through to the birth, or only at the time of her labour and delivery (known as intrapartum care). Obstetricians frequently assist with normal pregnancies and deliveries, either on their own or in shared-care arrangements with family physicians, but are also the key specialists for at-risk pregnancies and deliveries. Obstetricians also provide key roles in providing consultation services to family physicians' and midwives' patients when normal pregnancies or deliveries become more complicated.

Ontario Health Insurance Plan (OHIP)
OHIP is the acronym for the Ontario Health Insurance Plan, a service of the Province of Ontario. All residents of the province are entitled to health care services paid by OHIP. OHIP identifies a payment for each procedure, test or visit (all are 'services'), and then reimburses the health care provider each time that service is used by a patient.

On-Call
Someone is 'on-call' if they are scheduled to make themselves quickly available in an emergency or for another unscheduled event, such as a birth. A person who is on-call is expected to either telephone in or come to their workplace within a short period of time. Maternity care providers are frequently on-call because the date and time of most childbirth experiences cannot be planned in advance. (See also On-Call Group; Hard Call and Soft Call.)

On-Call Group/Shared On-Call System
When a group of care providers organize themselves to share on-call responsibilities to ensure 24- hour coverage and reasonable time off.

Ontario Physician Workforce Database
The Ontario Physician Human Resources Data Centre (OPHRDC), on behalf of several organizations in the Province of Ontario, collects data each year on all licensed physicians. The data for all active physicians, retirements, new doctors, etc. are collected from the physicians themselves. Information is also collected for each specialty – such as Obstetrics – by geographic region, age and sex. The Database can be used for planning purposes: to investigate regional coverage; whether doctors nearing the age of retirement are being replaced by new physicians; whether there are shortages of specialists, etc.

Operative Vaginal Delivery
During the second stage of labour if the birth of a baby needs to be hastened, a maternity provider can use forceps or a vacuum to 'assist' the birth. Forceps are curved metal instruments that are placed inside a woman's vagina and around the baby's head to use traction to deliver the baby. Vacuum extraction involves placing a suction cup on the baby's head that allows traction to assist with the birth of the baby. Also called assisted vaginal birth or instrumental delivery. These skills are part of the of the scope of practice for obstetricians and for some family physicians

Paediatric, Paediatrics and Paediatrician
The branch of health care and medicine that specializes in the care of infants and children is called paediatrics. Paediatricians are specialists in the diagnosis and treatment of abnormal conditions in infants and children and provide consultation to other health care professionals who specialize in well baby and child care. There are many pediatric sub-specialties including pediatric cardiology, psychiatry and surgery.

Parity
Parity refers to whether a woman has given birth and, if so, to the number of previous pregnancies she has had. A woman is described as nullip or nullipara if she has never given birth. A primip or primipara is a woman who has given birth to one child. A multip or multipara is a woman who has given birth to two or more babies.

Perinatal and Perinatal Health
'Peri' means near and 'natal' means birth, so the perinatal period is the time near the birth of a baby. The perinatal period is sometimes defined differently but the Canadian Perinatal Surveillance System defines the range to include any fetus that is of 20 weeks gestation or older, and up until the point of birth, and to any newborn who is 7 days old or less. Individuals or organizations that specialize in perinatal health therefore specialize in caring for women with complicated pregnancies, particularly where the fetus is at risk, and for newborns at risk.

http://www.phac-aspc.gc.ca/rhs-ssg/index.html

Perinatal Mortality/Morbidity
Perinatal mortality refers to any death of a fetus more than 20 weeks old that dies in the uterus or shows no signs of life at birth (stillbirth) and any infant that dies during childbirth or within 6 days of birth. (See also Mortality/Morbidity)

Physician Relief (see On-Call Group)

Physiological
Physiological is a term related to the way human bodies function naturally. Physiologic birth means birth that happens naturally, in the absence of medical or other interventions.

Population Health-based Approach
The term 'health' is being re-defined to mean more than the absence of disease. Health includes physical, mental, emotional and social well-being. With the expansion of our definition of health also comes the understanding that many factors can influence the health of individuals, and even whole communities and populations. These factors are called 'determinants of health'.

Health Canada lists 12 main determinants of health. OMCEP has made some slight alterations to the last two determinants:

- income and social status;
- social support networks;
- education and literacy;
- employment/working conditions;
- social environments;
- physical environments;
- personal health practices and coping skills;
- healthy child development;
- biology and genetic endowment;
- health services;
- gender (others include sexual orientation as well); and,
- culture (including ethnicity and race).

Population health aims to improve the health not just of individuals but also of a defined community or population. For maternity care providers, that population could be all of the women in their practice. For planners, the population could mean a specific community or city, or populations such as the following: Inuit and First Nations populations, ethnocultural communities; francophone populations; women with physical disabilities, etc. A population health-based approach must first define the populations to be served, identify their needs and available resources, and then identify and reduce any gaps in service to each population to create equity in the health care system. (see also determinants of health and health definitions)
Adapted from the Population Health section of the Public Health Agency of Canada and from the Government of Ontario's "Guide to Strategic and Program Planning" for Family Health Teams, July 11, 2005.

Postpartum/ Postnatal Care
'Post' means after and 'partum' and 'natal' mean to give birth, so postpartum and postnatal both refer to the period of pregnancy after a woman gives birth. OMCEP will primarily use the term postpartum in this report. Care during this period focuses on assessment, education, health promotion and support for mother and infant and assistance with the establishment of lactation/infant feeding and parenting.

Postpartum Haemorrhage
Postpartum haemorrhage is defined as an abnormally large amount of uterine bleeding after childbirth that can cause complications for the woman. Traditionally, primary postpartum haemorrhage was described as a blood loss of >500 cc in the first 24 hours of giving birth. Secondary postpartum haemorrhage was described as a blood loss of >500 cc after the first 24 hours of giving birth. New criteria look at whether the loss of blood volume is sufficient to modify a woman's vital signs. An essential skill for maternity care providers is to learn how to prevent and deal with postpartum haemorrhage.

Preconception or Pre-pregnancy Counselling
Preconception or pre-pregnancy counselling and screening include counselling to women and couples before a woman becomes pregnant. The counselling might focus on genetic and familial issues, pre-existing health concerns, lifestyle and nutrition issues, relationship and domestic violence concerns and environmental factors in the home, workplace and other settings:[i]

Premature and Preterm
Premature and preterm both refer to events that occur sooner than expected. When a woman goes into labour before the usual 37-40 week period of time this is known as a premature or preterm labour. A preterm birth occurs when an infant is born early, when the pregnancy has been less than 37 completed weeks or 259 days. The cause of most preterm births is unknown. Preterm births are associated with greater risks to the newborn.

Prenatal (see Antenatal/Prenatal)

Prenatal Education
Prenatal Education is sometimes called Childbirth Education. Prenatal education refers to any organized program of classes or individual education that is delivered to a woman who is pregnant, or to the woman and her partner or identified family. Prenatal education provides information about pregnancy, labour and delivery (birth), breastfeeding, and other early parenting issues.

Prenatal Screening
Prenatal Screening refers to the ongoing health care examinations – by health care practitioners and by laboratories – used to determine whether a pregnancy is remaining within the range that is considered normal and/or whether variations or complications are arising.

Primary Health Care and Related Definitions
In 1978, the World Health Organization (WHO) defined primary health care in part, as "the first level of contact of individuals, the family and community with the national health system

bringing health care as close as possible to where people live and work …"[ii]. Primary health care describes any services that deal with basic medical health, as well as preventative health, health education and health promotion.

Primary Health Care Provider: The primary health care provider is the professional who sees a person on an ongoing basis for the bulk of their primary health care needs. In Ontario, primary health care is almost always provided by a general practitioner (GP) or by a family physician (FP), although in many rural and remote areas a nurse practitioner (RN(EC)) may assume that role, and some people get their primary health care services at Community Health Centres or other community health agencies. The primary health care provider should not only see the person for their basic health care needs but also coordinate appointments with specialists, for testing, etc. without transferring their primary role. Primary health care providers often have the most complete and up-to-date health record for that individual.

Primary Care Provider: The primary care provider is the professional who is the first point contact and coordinates care to an individual when they are receiving care for a particular health need. For example, in maternity care the primary care provider is often a family physician, midwife or obstetrician. The primary maternity care provider does not have to be someone who offers intrapartum care. For example, nurse practitioners can act as the primary care provider in many maternity models, seeing women and taking care of many of their health needs during prenatal and postpartum care, and coordinating care with her intrapartum provider as well as any other specialists, lab technicians or diagnostic imaging specialists. What is key in every maternity model is that a woman knows at all times who is acting as her primary maternity care provider.

Primary Care Network (PCN)
Primary Care Networks are pilot projects in the Province of Ontario where networks of doctors use computers and information technology to share information about patients with each other. Over 266,000 individuals and 168 family physicians have voluntarily signed on to try out the new information technology in 13 centres.

Primary Health Care Transition Funds (PHCTF)
These Funds, provided by the Government of Canada, were started in 2000 and are scheduled to end in 2006. The purpose was to fund new large-scale projects in primary health care in order to find models that will increase access for all Canadians to a primary health care organization; expand access to essential services 24-hours a day and seven days a week; increase the emphasis on health promotion and disease prevention as well as treating illnesses; establish teams of providers from different professions (inter-disciplinary) to provide full coverage of all main services to patients in one setting. Various pilot projects have been funded and the results will be reported by 2006.

Primigravida
Gravida is the medical term for a pregnant woman. 'Primi' refers to the word 'one'. A woman who is pregnant for the first time is described as a primigravida.

Primip or Primipara
'Primi' refers to the word 'one' and 'para' means to give birth. A primip or primipara is a woman who has given birth to one child. (See also Parity)

Public Health Nurse (PHN)
A Public Health Nurse (PHN) is a nurse who works in the community through a public health unit, in areas such as health promotion and education; communicable disease prevention and surveillance; family health; chronic disease prevention, and many other areas. A Public Health Nurse might work with individuals, families, groups or communities, providing one-on-one service or working in a variety of community settings. In maternity care, a Public Health Nurse in Ontario is usually most active in prenatal education, in delivering the "Healthy Babies, Healthy Children" program (a screening and early intervention program for women and babies) or in providing postpartum home visits to women and their newborn children.

Public Health Units (PHU)
In Ontario, public health is delivered at the community level through local agencies governed by Boards of Health. There are 36 public health units located across the province. The province and municipalities share the costs. Their role is to protect the public from health hazards, to promote healthy communities, to control infectious diseases, to supervise food-handling safety and to work toward disease and injury prevention. The province is also covered by local Medical Officers of Health who protect the public's health following legislation known as the Health Protection and Promotion Act.

Regional Centres, also known as Level II Hospitals (see Hospital Types)

Regionalization
In Canada, the provinces are responsible for the delivery of health care. To streamline the health care system, many provinces divide the responsibility for health care into different geographic areas, or regions. Usually there is an appointed board, or several locally appointed or elected boards, to coordinate the health care in each region. In many provinces, these are called Regional Health Authorities, or RHAs. In the past, Ontario organized its regional groups into District Health Councils (DHCs). In 2004, Ontario announced the establishment of 14 new Local Health Integration Networks (LHINs) to "plan, coordinate, integrate and fund the delivery of health services at the community level".

Registered Midwife (see Midwife)

Registered Nurse (RN)
In Ontario, after completing nursing education, only those nurses who meet the registration standards with the College of Nurses of Ontario can practice as a registered nurse. As of 2005, all new registered nurses will have a degree in Nursing from a university; many existing RNs will continue to practise without a degree.

Registered Practical Nurse (RPN)
Registered Practical Nurses can be educated at the community college level and are also licensed to practice through the College of Nurses of Ontario.

Regulated Health Professions Act
Under the authority of the Regulated Health Professions Act, 1991 (RHPA), the power to register physicians, nurses and other regulated health professionals is provided to the College, which governs the health profession,

Risk and Risk Status (three definitions)
The word 'risk' means the chance for harm or loss. When describing pregnancies or maternity care, the words 'risk' or 'at-risk' are sometimes used. In this report, you may see the terms used in one of three ways:

- Low and High-Risk: These terms are used in maternity care to describe the chance of a complication, harm or loss occurring to a woman, her pregnancy or to her newborn. Since pregnancy and childbirth are normally healthy physiological processes, most women are described as 'low-risk' for complications and can be seen by any experienced maternity care provider. However, where known health problems or markers – sometimes referred to as 'risk factors' – are present, these women or newborns are at higher risk for complications and may require care by professionals and hospitals specializing in high-risk care.

- At-risk Community: A second way in which OMCEP will apply the term 'risk' in this report is to discuss communities or cities that are in danger of losing some or all of their maternity care services. While some rural and remote areas may not realistically be able to offer maternity services to women with high-risk pregnancies, many communities can provide care for uncomplicated pregnancies. The following factors are indications that a community is at risk of losing its maternity care services: providers are retiring or relocating and communities are having difficulties recruiting replacements; essential equipment is unavailable; limits are placed on the number of maternity care beds in a hospital insufficient to respond to demand; hospital-based services have to be suspended or closed temporarily because of shortages in providers, beds or technology; funds previously used for maternity care are re-allocated to other hospital-based services. OMCEP defines communities experiencing these problems as communities-at-risk of losing quality maternity care.

- At-risk Population: Some populations of women are said to be at greater risk of not having access to quality maternity care because of language or cultural barriers, their age, physical or mental health disabilities, low socio-economic status, and other factors. Francophone women may be at risk if they cannot receive care in French or if a translator is not available for all appointments, likewise immigrant and refugee women may be at greater risk of complications or reduced care because of language or cultural issues. Many aboriginal communities are at greater risk if they are located in remote communities, but First Nations women may also be at risk if local maternity care is not responsive, or seen to be responsive, to their cultural needs. Young women, particularly teenagers, may be at greater risk because they do not yet have the capacity or the means to follow detailed care plans, or they may avoid appointments because they feel judged for being pregnant. Women who are pregnant and also have existing physical disabilities may not be able to access appointments because buildings are inaccessible; translators are

not made available for the hearing-impaired, etc. Women with multiple needs because of existing mental health issues, poverty, homelessness, etc. face some of the greatest risks to a health pregnancy if care is not take to address all of their needs in one integrated plan.

Scope Of Practice
Scope of practice is a concept delineated in a document, or a series of documents, that defines the boundaries within which each health care professional is regulated to provide services. These scopes of practice are developed by the professional colleges and regulated in the specific professional acts under the Regulated health Professions Act to provide definition for the public and for other providers.

Secondary Hospitals, also known as Level II Hospitals (see Hospital Types)

Sessional Fee
A sessional fee is a form of payment method – in contrast to capitation, fee-for-services, or other salary models. In health care, a sessional fee refers to payment on an hourly rate, or for a fixed period of time, called a "session". Usually a session would last for a few hours or less. Typically, sessional fees are paid to physicians on top of, or in substitute for, fee-for-service billings.

Shared Care (also sometimes called Team Practice)
The common medical definition of shared care refers to the practice where a general practitioner or family physician shares care for a woman's pregnancy with an obstetrician, however more and more the term is used to describe any partnership of two or more health care providers or health care organizations who work together to provide care to a woman throughout her pregnancy and/or after the birth (postpartum care). The team may consist of health care providers from the same profession, or a team made up of members from different provider groups (multi-professional or inter-professional). Shared care may involve agreements for sharing on-call duties so care can be provided to women for childbirth, as well as for other after-hours care. Shared care does not always mean that each provider has equal standing. While the care for the woman and/or newborn may be shared, accountability or authority for decision-making may be shared or may rest in one provider more than another.

Shared On-Call System (see On-Call Group)

Single-professional Care

Single-professional care occurs when members of one profession only provide care. Examples of single-professional maternity care teams include groups of obstetricians (OBs) or family physicians (FPs) or midwives (RMs) working together or sharing on call.

Spinal and Combined Spinal-epidural
In a spinal the anaesthesiologist injects pain medication (usually a narcotic, occasionally an anaesthetic) into the space that lies deeper than the epidural space ("spinal"). This is used for quick and short-term pain relief

In a combined spinal epidural (CSE) the anaesthesiologist injects pain medication (usually a narcotic, occasionally an anaesthetic) into the space that lies deeper than the epidural space ("spinal"). The anaesthesiologist then pulls outward into the epidural space; threads a catheter into the epidural space, and removes the needle. The spinal cannot be repeated, but the catheter remains for an epidural should you want additional pain relief later.

Spontaneous Abortion (see Miscarriage)

Stakeholder
A stakeholder is any individual or group who has a direct interest in the topic or issue being studied. For maternity care, the key stakeholder would be the pregnant woman. Her needs or maternity care experiences must lie at the centre of any discussion of the maternity care system. Other stakeholders would include her family, women's advocate groups, and all of the health care providers, professional associations, maternity care organizations, colleges, regulatory groups and government ministries involved with the coordination of maternity care.

Standards Of Practice
Standards of practice are guidelines developed by the organization accountable for the delivery of health care services by a certain profession. In health care, the colleges regulating each professional group set standards of practice, e.g. College of Midwives of Ontario or College of Nurses of Ontario. There can also be separate community standards and clinical guidelines set by a profession's own internal association, e.g. Association of Ontario Midwives or Ontario Nurses' Association.

Stillbirth
A stillbirth is said to occur when a fetus of 20 weeks gestation or older shows no signs of life at birth. In most areas a cause of death must be established and a certificate of stillbirth is issued.

Team Models of Care
Team models of care can take place among providers of the same profession or can involve mixed teams with multiple professional groups. In this report, OMCEP will occasionally group models of maternity care in the following categories:

Single-professional Care: The most common current model of maternity care involves groups of obstetricians (OBs) or family physicians (FPs) or midwives (RMs) working together and sharing on-call schedules with other members of the same profession only. When only one provider group is included in a structured team it is called single-professional care.

M**ulti-professional Care:** Where different provider groups are involved in a woman's maternity care, but that care is transferred from one professional to another, usually sequentially, without them working together as a formal integrated team, this is known as multi-professional care. Common examples of multi-professional care include a situation where a family physician or nurse practitioner cares for a woman until she is 32 weeks pregnant, after which time her care is transferred to an OB. Multi-professional care is also involved when a woman sees one or more specialists or consultants, at the same time as seeing her primary provider; she might receive care from a lactation consultant and a social worker while also be cared for by her obstetrician.

Inter-professional Care: This model also involves shared care between different professions but it is implemented in an integrated way in which the team members work together in a formal structure and there is an expectation that the team will have an ongoing relationship with the woman throughout pregnancy, childbirth and beyond. Often these teams work in the same location, have a shared philosophy of care and clinical practice guidelines. Examples of inter-professional care can include maternity care clinics or centres.

Tertiary Care Centres/Tertiary Hospitals, also known as Level III Hospitals (see Hospital Types)

Transfer of Care
Transfer of care refers to the process whereby a health care provider transfers decision-making authority for a woman's care to another provider, either for a short interval or for ongoing service. In maternity care, transfer usually occurs if a pregnant woman or her newborn develops complications during the pregnancy or childbirth and is transferred to a specialized caregiver such as an obstetrician, surgeon or paediatrician.

Trimester
A woman's pregnancy is generally described in terms of three stages, and each is called a trimester. The first trimester lasts from the beginning of pregnancy until 12 completed weeks, the second lasts from 12 to 28 completed weeks and the third lasts from 28 weeks until the birth.

Ultrasound Scan
Ultrasound is a technique for taking images of an individual's internal parts using sound waves. An ultrasound scan can take a picture and other measurements of a fetus in the womb, or of other systems inside the body. The health care provider can look at the image at that moment, in real time, and check for a pregnancy, or the normal growth of a fetus, or can take pictures and other measurements that can be saved, interpreted or shared electronically.

Vacuum Extraction (see Operative Vaginal Delivery)

Vaginal Birth
The process of giving birth where the baby is born by coming out through a woman's vagina. Sometimes this is referred to as a 'normal birth'; meaning surgery was not necessary to remove the baby during delivery (see Caesarean Section).

Woman: (mother/consumer/patient/client)
The Ontario Maternity Care Expert Panel (OMCEP) will use the word 'woman' when referring to the female person who is the active participant and recipient of maternity care services. Sometimes the literature will refer to women who are pregnant as patients, clients, consumers or mother

Woman-Centred/Women-centred (two definitions)

- Definition #1, Woman and family-centred care entails a plan for each woman that places her needs and those of her identified family and supports at the heart of the services she receives. Her needs and choices will determine the focus for the planning and delivery of her individual maternity care so she can participate and direct her own pregnancy and birth experience.

- Definition #2, Childbirth is a profound event for women, their families and for communities. A women-centred maternity care system seeks out information on the needs and preferences of women and places those needs at the heart of all of its efforts. Women and their families are actively involved in the planning, monitoring and evaluation of the maternity care system. A women-centred maternity care system recognizes the work and lifestyle needs of providers and any current limits to the health care system, but always strives to meet provider needs and eliminate barriers so care to women and their families is not compromised. Women-centred care is different from maternity services that are organized primarily around meeting the needs of the provider or the hospital or health care system.

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[i] A chapter on Preconception Care can be found in:
Family-Centred Maternity and Newborn Care: National Guidelines, Chapter 3. Public Health Agency of Canada. http://www.phac-aspc.gc.ca/dca-dea/publications/fcmc03_e.html

[ii] *Declaration of Alma-Ata.* World Health Organization (WHO), 1978. http://www.euro.who.int/AboutWHO/Policy/20010827_1

Ontario Maternity Care Expert Panel
Appendix K
K-1 Consumer Complaint

To: Wendy Katherine, Project Manager, OMCEP

I received a letter dated 18 February 2005 from V. Van Wagner & T. O'Driscoll requesting that I send you an electronic version of my summary of concerns & recommendations. Document is attached.

The letter also reminded me that the OMCEP's mandate is to address maternity-care issues at a provincial level (rather than addressing individual cases). I understand this; the purpose of my writing is to encourage progressive change at the level of health care administration/policy (not to address my specific case).

I would like to let the committee members know, however, that there is little recourse for specific concerns (even when it is not a complaint - but merely seeking better understanding).

In my case, my OB was dismissive in person, then refused to answer my polite letter.

I wrote the hospital a polite/professional letter, but even the hospital administrator said that while the committee agreed with my recommendations, no one at the hospital will ever tell me why I received a C-section.

When I contacted the College of Physicians, the investigator told me: (a) Why didn't you ask more questions? (b) You signed the consent forms so you cannot complain, and (c) If you have another child you will have no choice but to return to this hospital where you will be at the mercy of the same doctors against whom you filed a complaint. My experience tells me there is little accountability for the actions of obstetricians. Little wonder our hospital's C-section rate is now 39-40%.

The OMCEP letter noted that the committee hopes to make a contribution toward "improving our system and its ability to provide women with family-centered care, which is evidence-based and facilitates informed choice." My hospital care lacked these qualities. I hope that the recommendations of this committee will be endorsed by medical practitioners and receive some form of force and follow-up to ensure their implementation.

Good wishes - the OMCEP's task is important work. I hope you will make a difference for others.

PART I: Summary of Concerns:

1. As a patient, I was denied informed decision-making in the birth of my children. I was not informed of the risks associated with medical induction. My obstetrician threatened me with stillbirth if I did not agree to an induction. Yet, there was no clinical evidence of a problem in the pregnancy (biophysical scores of 8/8, babies continuing to advance on growth charts, mother in good health). Nor was I informed in advance that inductions are frequently delayed at the hospital. When delays took place, there was a lack of communication;

2. I was denied food for several days. The lack of nourishment and sleep led to exhaustion that compromised my strength and ability to cope with labour. I was kept N.P.O. Monday 21 April 2003 to Saturday 26 April 2003 (Wednesday 23 April 2003 afternoon I returned home and was able to eat for one day) – this is a long duration for a mother of twins to be kept on liquids (“NPO”). The Society of Obstetricians and Gynaecologists of Canada recommends that before induction starts, the indication for, and method of induction ought to be clearly documented on the patient’s chart. I assume other changes to the plan of care ought to be charted;

3. Patient care should be transferred to another obstetrician when the primary caregiver leaves during a procedure. I was unaware that my obstetrician had left town to attend a conference for two days during

the course of my induction. I did not expect my doctor to be available 24/7, but I would have liked to have known he was leaving town and which obstetrician I could contact with questions and concerns;

4. The use of monitors from the time of Cervidil application until Oxytocin (four days later) resulted in severe pain due to the hard kicking of the babies and this made sleep impossible. The patient should have been informed of these procedures and their potentially prolonged nature in advance of admission to hospital;

5. It is inappropriate and unprofessional to tell a woman in labour about stillbirths and autopsies from the previous shift. Not only was this stressful, but I wonder to what extent this experience influenced the obstetrician's decision to perform a caesarean section an hour before shift change as another caesarean section was being scheduled;

6. I was not informed of alternatives to a caesarean section although there was no emergency, such as fetal distress. The obstetrician failed to discuss risks and alternatives. The idea of informed consent requires that a patient be informed of the risks and benefits of a procedure as well as available options. I was denied this information;

7. More concerning is the fact that hospital records reveal the obstetricians declared my labour "failure to progress" (a two hour delay was stated) and recommended a caesarean section without conducting an internal examination. My cervix was not checked after 2:30 a.m. 23 April 2003 (nurses' reports note that my cervix was fully effaced and at 9.5 to 9.75 cm at that time). I lay on the operating table another hour prior to first incision and again without anyone conducting an internal examination;

8. Nor was my midwife, as a member of the care team, informed of the caesarean section, until I had signed the consent forms and was wheeled into surgery;

9. The shouting argument between anaesthesiologists over epidural, spinal or general anaesthetic, particularly yelling "JUST KNOCK HER OUT!" (as she lay naked, vomiting, and strapped to a surgical table), was unprofessional and frightening to the patient;

10. Due to the SARs crisis, no doulas or other support people were allowed to enter the hospital. Apart from my husband (who was equally terrified), I was alone and the birth felt completely out of my physical strength or personal decisions;

11. It is extremely difficult for a woman post-surgery to care for multiple newborn infants in a room alone and overnight. I feared dropping the infants due to my lack of strength post-surgery and the first night struggled with the IV and catheter while leaping from the bed with abdominal pain from the incision to attend to the babies.

PART II: Recommendations:

I propose the following recommendations:

1. In this specific case, numerous omissions occurred, including failure to: (a) provide informed decision-making with regard to medical induction and caesarean section; (b) update the chart and communicate with care team members and the patient regarding changes to the plan of care; (c) provide solid foods (for several days) and prompt removal of IV when the plan of care was changed; (d) transfer care to another obstetrician when the primary caregiver left town for two days during the medical procedure; (e) provide adequate post-operative care to meet the standards of the Canadian Medical Association.

2. There should be discussion and disclosure of risk factors associated with medical induction with the patient and her partner. I was informed about the elevated risk of caesarean section only after I asked specifically about the caesarean rate for medical induction of first-time mothers. No other risks associated with medical induction were discussed with me.

The Society of Obstetricians and Gynaecologists of Canada[1] clearly states in their clinical practice guidelines that the risks and benefits of induction in the given situation should be reviewed with the pregnant woman and her partner, including: increased risk of caesarean delivery, fetal compromise/abnormal heart rate tracing, hyperstimulation of the uterus, uterine rupture, cord prolapse with ARM, maternal water intoxication (rare), medical legal (oxytocin is commonly considered by the courts as a cofactor associated with fetal and/or neonatal compromise).

I have read further that medical inductions (Oxytocin and prostaglandin inductions) have the following risks: increased risk of rupture of uterus, hysterectomy, increased postpartum blood loss, longer, more-intense contractions of the uterus (uterine hyperstimulation), thus interfering with the flow of blood through the placenta to the fetus, increased rates of cerebral palsy among newborns, higher incidence of fetal distress, abnormal fetal heart patterns, increased passage of meconium during birth, and higher rates of newborn jaundice.[2]

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[1] Society of Obstetricians and Gynaecologists of Canada (1996). Induction of Labour. *Clinical Practice Guideline for Obstetrics*. No. 57, October, 1-7.

[2] Barrett, J. and T. Pitman. 1999. *Pregnancy and Birth: The Best Evidence*. Toronto: Key Porter Books Ltd; Blakemore K. J. et al. 1990. "A Prospective comparison of hourly and quarter-hourly oxytocin dose increase intervals for the induction of labor at term." *Obstet Gynecol.* 75(5): 757-61; Chard. T. 1997. "The physiology of labour and its induction." In *Benefits and Hazards of the New Obstetrics*, Ed. T. Chard and M. Richards. London: Heinemann, 1997; Egarter C. H., P. B. Husslein and W. F. Rayburn. 1990. "Uterine hyperstimulation after low-dose prostablandin E2 therapy: tocolytic treatment in 181 cases." *American Journal of Obstetrics & Gynecology*. 163(3):794-96; Fletcher, H. M., et al. 1993. "Intravaginal misoprostol as a cervical ripening agent." *British Journal of Obstetrics & Gynaecology*. 100:641-4; Gaskin, I. 2003. *Ina May's Guide to Childbirth*. (New York: Bantam Books); Goer, H. 1999. *The Thinking Woman's Guide to a Better Birth*. New York: Pedigree; Hauth, J.C. et al. 1986. "Uterine contraction pressures with oxytocin induction/augmentation. *Obstet Gynecol*. 68(3):305-9; Kramer, R. L. Gilson, G.J. et al. 1997. "A randomized trial of misoprostol and oxytocin for induction of labor: Safety and efficacy." *Obstetrics & Gynecology*. 89:387-91; Krammer, J. et al. "Pre-induction cervical ripening: a randomized comparison of two methods." *Obstet Gynecol* 85(4):614-618; Moldin, P. G. and G. Sundell. 1996. "Induction of labour: a randomised clinical trial of amniotomy versus amniotomy with oxytocin infusion." *British Journal of Obstetrics and Gyneacology*. 103(4): 306-12; Mundle, W. R. and D.C. Young. 1996. "Vaginal misoprostol for induction of labor: A randomized controlled trial." *Obstetrics & Gynecology*. 88:521-5; Plaut, M. M., Schwartz, M. L. and Lubarsky, S. L. 1999. "Uterine rupture associated with the use of misoprostol in the gravid patient with a previous cesarean section." *American Journal of Obstetrics and Gynecology*. 180:1535-42; Rooks, J. P. 1997. *Midwifery and Childbirth in America*. Philadelphia: Temple University Press; Summers, L. 1997. "Methods of cervical ripening and labor induction." *J of Nurse Midwifery.* 42(2):71-85; Surbek, D. V. et al. 1997. "A double-blind comparison of the safety and efficacy of intravaginal misoprostol and prostaglandin E2 to induce labor."*American Journal of Obstetrics &*

3. The Canadian Medical Protective Association, the Society of Gynaecologists and Obstetricians of Canada, and the College of Physicians and Surgeons need to undertake a careful and critical assessment of escalating rates of caesarean sections and medical inductions. According to the 2003 *Canadian Perinatal Report*,[3] the caesarean rate has increased from 5% in the late 1960s, to 18.2% in 1991/1992, to 21.2% in 2000/2001. *This rise has not been accompanied by a related improvement in the infant mortality and morbidity rates*. The World Health Organization has recommended that no geographic region should have rates of induced labour over 10%. The World Health Organization also states the total caesarean rate should be 10% or less in community hospitals and 15% or less in tertiary care hospitals. The existing practices of high rates of induction and caesarean section raise serious ethical issues for the medical profession in Ontario. Our local hospital, xx General Hospital, has caesarean section rate of 39%. The national average for women having a repeat caesarean section is 70%.[4] Women and health care providers need to be better informed of the risks associated with caesarean sections, and concerted efforts made to lower these exceedingly high rates.

Risks to mother include greater risk of maternal death than vaginal birth, longer and more painful recovery period problems with breastfeeding, difficulty bonding with the baby, secondary infertility, hemorrhage and anesthesia complications, increased blood loss, accidental surgical injury (bowel, bladder, uterus, or uterine blood vessels), increased risk of hysterectomy, and postsurgical complications (infection, paralysed bowel, blood clots, pulmonary embolism, repeat surgery, pelvic infection, pneumonia, septicemia, clotting dysfunction). Nearly one third of cesarean mothers experience minor complications including fever, hemorrhage, blood-filled swelling (hematoma), urinary tract wound, uterine infection, leg clots (phlebitis), or paralysed bowel or bladder. Long-term and chronic complications from scar tissue adhesions include pelvic pain, abdominal adhesions leading to bowel obstruction, pain during sexual intercourse. Mothers with caesareans are also more prone to depression, increased infertility and ectopic pregnancy, increased risk of abruptio placentae, placentai previa, placenta accredta or percreta, and increased uterine rupture. A caesarean poses risks to the baby as well including accidental fetal laceration, respiratory distress, jaundice and development of atopic disease.[5]

Gynecology. 177:1018-23; Wing, D. A. et al. 1995. "A comparison of misoprostol and prostaglandin E2 gel for preinduction cervical ripening and labor induction." *American Journal of Obstetrics & Gynecology*. 172:1804-10; Wing, D. A. and R. H. Paul. 1996. "A comparison of differing dosing regimens of vaginally administered misoprostol for preinduction cervical ripening and labor induction." *American Journal of Obstetrics & Gynecology*. 175: 158-64*;* Wing, D. A., et al. 1995. "Misprostol: An Effective agent for cervical ripening and labor induction." *American Journal of Obstetrics & Gynecology*, 172: 1811-6.

[3] Health Canada. *Canadian Perinatal Health Report 2003* (Ottawa: Minister of Public Works and Government Services Canada).

[4] Health Canada. *Canadian Perinatal Health Report 2003* (Ottawa: Minister of Public Works and Government Services Canada).

[5]Al-Mufti, R. McCarthy, A., and Fisk, R. M. 1996. "Obstetricians' personal choice and mode of delivery." *Lancet* 347:544; Annibale, D. J. et al. 1995. "Comparative neonatal morbidity of abdominal and vaginal deliveries after uncomplicated pregnancies." *Arch Pedeiatr Adolesc Med*. 149(8):862-67; Astbury J. et al. 1994. "Birth events, birth experiences and social differences in post-natal depression." *Aust. J. Public Health.* 18(2): 176-84; Astrash, H. K. , Alexander S. and Berg, C. J. 1995. "Maternal mortality in developed countries: Not just a concern of the past." *Obstetrics & Gynecology.* 86:700-5; Bouvier-Colle, M. H. Varnoux, N. Costes, P. and Hatton F. 2001. "Reasons for the underreporting of maternal mortability in France, as indicated by a survey of all deaths among women of childbearing age." *International Journal of Epidemiology*. 20:717-21; Bujold, E. Bujold, C., Hamilton, E. F., and Gauthier, R. J. 2002. "The Impact of a single-layer or double-layer closure on uterine rupture." *American Journal of Obstetrics and Gynecology*. 186: 1326-30; Burns, L. R., Geller, S. E., and Wholey, D. R. "The effect of physician factors on the cesarean section decision." *Med Care*. 33(4): 365-82; Burt, R. D., Vaughan, T. L. and Daling, J. R. 1988. "Evaluating the risks of cesarean section: low Apgar score in repeat C-section and vaginal deliveries." *Am J Public Health.* 78:1312-14; Cohen, Nancy W. 1991. *Open Season: A Survival Guide for Natural Childbirth and VBAC in the 90s (*New York: Bergin & Garvey); Fraser, W. et al. 1987. "Temporal variation in rates of ceserean section for dystocia: does 'convenience' play a role?" *Am J Obstet Gynecol*.

4. Increased staffing of nurses could improve patient care and reduce the stress on nurses who are already over-worked and under-paid. My case illustrates numerous problems with nursing care (e.g., staffing shortages, unprofessional conduct through discussions of stillbirths and autopsies with a woman about to be induced; mixing up the assessment of twins' weights and errors in discharge instructions -- instructing the patient to formula feed an infant with a false 2 lb. weight loss; failure to provide adequate anaelgesic post-surgery; nurses as "floaters" from other wards without knowledge of infant care and breastfeeding).

5. Additional midwifery positions are desperately needed in Ontario. Our community has only recently increased the number of midwives with hospital privileges from four to six. There were only four midwives in our community at the time of our babies' birth. At that time there was also a waiting list of expectant mothers hoping to receive midwifery care. I recommend that the number of midwives with hospital privileges should exceed or, at minimum, match the number of obstetricians employed at xx General Hospital. I also recommend that the panel examine the wages of midwives compared with family physicians and obstetricians. I strongly recommend that the salaries of midwives be enhanced.

6. At a time when birthing centres are closing, the Ontario government needs to consider whether these actions are truly in the best interests of women and children. Increased numbers of birthing centres are needed as an alternative to hospital environments for expectant mothers.

156(2):300-304; Gabay, M. and Wolfe, S. M. 1994. *Unnecessary Cesarean Sections: Curing a National Epidemic*. Washington, D. C.: Public Citizen's Health Research Group; Gaskin, I. M. 2003. *Ina May's Guide to Childbirth* (New York: Bantam Books); Goer, Henci. 1999. *The Thinking Woman's Guide to a Better Birth* (New York: Pedigree); Hall, M. H. and Bewley, S. 1999. "Maternal mortality and mode of delivery." *Lancet* 354:776; Hemminki, E. and Merilainen, J. 1996. "Long-term effects of cesarean sections: ectopic pregnancies and placental problems." *Am J Obstet Gynecol*. 174(5):1569-74; Hook, B. et al. 1997. "Neonatal morbitidy after elective repeat cesarean section and trial of labor." *Pediatrics*. 100(3): 348-53; Hueston, W. J. McClaflin, R. R. and Claire, E. 1996. "Variations in cesarean section delivery for fetal distress." J Fam Pract. 43(5): 461-67; Keeler, E. B. and Brodie, M. 1993. "Economic Incentives in the choice between vaginal delivery and cesarean section. " *Milbank Quarterly*. 71(3):365-404; Korte, D. 1997. *The VBAC Companion* (Boston: Harvard Common Press); Lagrew, D. C. Jr. and Morgan M. A. 1996. "Decreasing the cesarean section rate in a private hospital: success without mandated clinical changes." *Am J Obstet Gynecol.* 174(1): 184-91; Lomas, J. and Enkin, M. 1989. "Variations in operative delivery rates." In *Effective Care in Pregnancy and Childbirth*. Editors Chalmers, I, Enkin, M.. and Keirse, M. (Oxford: Oxford University Press); Mutryn, C. S. 1993. "Psychosocial impact of cesarean section on the family: a literature review." *Social Science Medicine*. 37(10) 1271-1281; Rockenschaub, A. 1990. "Technology-free obstetrics at the Semmelweis Clinic." *Lancet.* 335:977-998; Ryding, E. L. Wijma, B. and Wijma, K. 1997. "Postraumatic stress reactions after emergency cesarean section." *Acta Obstet Gynecol Scand.* 76:856-861; Sandmire, J. F. and R. K. DeMott. 1996. "The Green Bay cesarean section study. IV. The Physican Factor as a determinant of cesarean birth rates for the large fetus." *American Journal of Obstetrics & Gynecology.* 174(5):1557-64; Schuitemaker, N. et al. 1997.. "Maternal mortality after cesarean in The Netherlands." *Acta Obstet Gynecol Scand.* 76(4):332-34; Sepkowitz, S. 1992. "Birth weight-specfic fetal deaths and nonenatal mortality and the rising cesarean rate." *J Okla State Med Assoc*. 85(5): 236-41; Shearer, E. L. 1993. "Cesarean section: medical benefits and costs." 37(10):1223-31; Smith, J. F., Hernandez, C. and Wax, J.. R. 1997. "Fetal laceration injury at cesarean delivery." *Obstet Gynecol*. 90(3): 344-46; VamHam M.A., van Dongen P.W., Mulder J. 1997. "Maternal consequences of cesarean section. A retrospective study of intra-operative and postoperative maternal complications of cesarean section during a 10-year period." *European Journal of Obstetrics and Genecol Biol* 74(1):1-6; *Why Mothers Die 1997-1999: The Confidential Enquiries into Maternal Deaths in the United Kingdom*. London: Royal College of Obstetricians and Gynaecologists Press, 2001; Negele, K., J. Heinrich, M. Borte, A. von Berg, B. Schaaf, I. Lehmann, H. E. Wichmann, G. Bolte, LISA Study Group. 2004. "Mode of delivery and development of atopic disease during the first two years of life." *Pediatr Allergy Immunol.* 15(1): 48-54.

7. Encourage doula registry and training programs as well as hospital policies for the provision of doulas. Support persons are of crucial importance to women in labour. Research suggests labour support persons help women to cope better, use fewer drugs, reduce the C-section rate, and alleviate the heavy workload on nursing staff. An additional support person or doula could also have inquired on my behalf, improved communications between the wards, and helped me to seek out options as the week progressed.

8. Obstetrical teams in Ontario hospitals require continuing education programs to ensure that these teams operate effectively with professional respect for and inclusion of midwives (Many midwives have hospital privileges in Ontario and practice along side obstetricians and family doctors). My experience demonstrates the negative consequences for the patient when midwives are excluded from critical decision-making and patient care.

9. Following the SARs crisis, our local hospital has restricted labour support to two people. This is an unreasonably low number that allows little opportunity for trading off between members of the labour support team (for example, husband and doula). I recommend 3 to 4 labour support persons so that team members can rotate and provide ample encouragement and comfort to the woman in labour.

10. Hospital documentation made available to women regarding obstetrical procedures requires important revisions. The documentation produced by the xx Hospital to inform women about non-emergency caesarean sections is outdated.[6] The existing document identifies the caesarean section rate as 16%. It is in fact, 39% at xxH. I was not offered this documentation until after I filed a formal complaint with the hospital (8 months after the hospitalization).

11. Documentation produced by the Society of Obstetricians and Gynaecologists of Canada provides inadequate information about the potential risks associated with medical induction. Only caesarean section and forceps are briefly mentioned on the final page of the document, titled, "Bringing Baby Safely Into the World."[7] I was not offered this documentation until after I filed a formal complaint with the hospital (8 months after the hospitalization).

12. It is reprehensible that obstetricians receive a higher billing for performing caesarean sections over vaginal deliveries or that obstetricians are only paid for the deliveries that take place during their shift (leading to rushed caesarean sections prior to shift change). Measured need to be taken to encourage better health care outcomes for women and babies. The Canadian Medical Protection Association and the Society of Obstetricians and Gynaecologists of Canada should examine rates of caesarean sections on a regular basis at hospitals across Canada. In particular, the incidence of caesarean sections should be assessed to see whether surgical rates increase during Fridays, holiday seasons, and toward the end of shifts.

13. Educational programs, including medical school and nursing programmes, need improved and more extensive components on ethics, patient care, communication, and cooperation among obstetrical teams. Medical and nursing students will also benefit from classes on the advantages of labour support instructed by doulas and midwives. My experience raises serious concerns about just what nursing students, medical students and residents learned witnessing the decision-making process and management of this patient's care.

14. Errors and inconsistencies in hospital documentation (numerous labour and delivery forms obtained from hospital records) are concerning because they violate the Society of Obstetrician and Gynaecology Consensus Statement (#19) on the management of twin pregnancies: "(i) For either twin, the indication(s) for any intervention should be convincing, compelling, and documented at the time of the events(s); (j) Documentation of all aspects of labour and delivery should be clear, contemporaneous, and consistent among all involved health care providers; (k) Progress of labour should emerge clearly from the

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[6] xx General Hospital. 1997. *Non-Elective Cesarean Section: Plan of Care* (xx Hospital).
[7] The Society of Obstetricians and Gynaecologists of Canada. 1998. *Bringing Baby Safely Into the World: Inducing Labour* (Ottawa: The Society of Obstetricians and Gynaecologists of Canada). See also www.medical.org.

documentation."[8] It is essential (for the quality of patient care and medical-legal reasons) that improved efforts be made to ensure that obstetrical documentation follow these guidelines.

15. Abusive behaviour toward women, especially in childbirth, is unacceptable and harmful (and can cause Post Traumatic Stress Syndrome). Abusive or unacceptable behaviour includes: threats, coercion, yelling, belittling, dismissing, treating without informed consent, omission of information, misrepresentation (of medical situation and interventions).[9] Examples of each of these violations occurred in the present case.

16. When violations of hospital protocol and failure to meet medical standards of care occur, it is essential that an independent review committee investigate these cases and discipline hospital staff. In my case, no such committee existed and the ad hoc committee formed to discuss my case (my recommendations were discussed rather than my specific case) consisted of the very individuals involved (The most powerful person on the committee was my obstetrician). There was no accountability, no disciplinary action, and no changes to hospital policy and practices.

[8] *Journal SOGC*, No. 91, July 2000, page 10, statement #19.
[9] A. F.P.L. d'Oliveira, S.G. Diniz, and L.B. Schraiber. "Violations against women in health-care institutions: an emerging problem." *The Lancet*, Vol. 359, May 11, 2002.

Schedule K - Submission to the Ontario Maternity Care Expert Panel
K-2 - Fetal Alert Network

October 22, 2004

Ms. Wendy Katherine
Project Manager
Ontario Maternity Care Expert Panel
Women's Health Council Secretariat
Ministry of Health and Long-term Care

RE: Current State of Maternal/fetal Care in Ontario and Fetal Alert Network

Dear Ms. Katherine:

First of all, I would like to thank you for taking the time to listen to our presentation recently.

I write on behalf of our trans-disciplinary team of health care providers belonging to the Fetal Alert Network (FAN) who are directly involved with various levels of maternity care in the province to [1] inform you and the ministry of our exciting program to improve the access and care, [2] to solicit immediate partnership for some of urgent needed programs to improve integration and coordination of the system, and [3] to develop a long-term partnership and support for the program.

1. Pressures on Ontario's Maternity Care System

1. **Impact of complicated pregnancy:** Of ~132,000 deliveries in Ontario each year, approximately 20,000 of these pregnancies are considered intermediate to high-risk complicating maternal and/or fetal health. Although these pregnancies comprise only ~15% of total birth in the province, they consume 70-75% (up to 4 folds longer average length stay during hospitalization and ~ 300 million dollars per year just on acute hospitalization cost alone) of the health care resource. Approximately 25% of these complicated pregnancies are due to fetal reasons and 75% are complicated for maternal reasons. Despite the medical, socio-economic and political impact of these high-risk pregnancies, the province of Ontario does not have any accurate data or evidence on the scope of this challenge with which to develop effective health care policy, to promote and improve maternal care and to prevent risks associated with complicated pregnancies. There has not been any discussion at any level, either from health care providers perspective or health service systems perspective to initiate and to develop an integrated comprehensive and provincial system of care.

2. **Increasing Demands for antenatal Care:** Recent advances in antenatal diagnostic and therapeutic technology have changed and are continually changing the very nature and natural history and outcomes of high-risk pregnancies, particularly those that are complicated by fetal anomalies. This has created significant demand and public expectation of antenatal care. This combination of increased complexity, sophistication of and increased demand for antenatal care has created significant access problem to antenatal maternity care for these affected women. For example, one of the larger urban referral centers in Ontario has seen an increase in antenatal outpatient volume by 30 % over the last 3 years, and an average waiting time for some urgent cases now increased up to 3 weeks and non-urgent counseling up to 6 months. This has a ripple effect of further delay in access for patients in non-urban areas and Northern Ontario where timely access to primary care further compounds the difficulty.

3. **Impact of Congenital Anomalies:** Birth defects affect 1-5 % of all pregnancies and constitute approximately 25% of all intermediate to high-risk pregnancies treated in the province. This represents 2,000 to 4,000 children per year in Ontario each year. The economic impact of these children on acute care alone conservatively represents ~ 500 million dollars annually, based on the American data (The March of Dimes Birth defects Foundation). Despite the fact that Ontario is the most populous (40% Canadian population) and one of more prosperous provinces in this country, we have no accurate data on incidence and the scope of this problem, clinical outcomes, health services utilization, and socio-economic impact.

Ontario is often excludes whenever there is any discussion at national level. The importance and urgency of this problem is clearly illustrated when one considers the issue of increasing incidence of diabetes affecting pregnant women in the province. There is concomitant increase in birth defects affecting up to 1 in 20 diabetes associated pregnancies. This is especially a crucial issue in Northern Ontario, affecting the first nations' population.

4. **Impact of Changing demographics on Maternity Care:** Over the last two decades, there has been a shift toward urbanization of the population in Ontario both from consumers' and health care givers' perspective. Growth in number of larger cities in the province is uncontrolled and increasingly challenging today. The greater Toronto area adds population the size of city of Kingston (~100,000) each year due to the influx of immigrants, and this obviously changes the composition, needs, and complexity of maternity care plan in the province. The loss of primary care support in rural regions and conversion of regional referral centers into primary care provider roles further create gridlock in the system. This naturally affects all levels of care including complicated pregnancies. There has not been any comprehensive integrated effort to develop oversight systematic approach to this increasing challenge.

2. Responding to Challenges: Fetal Alert Network

To [1] provide a well coordinated, and integrated system of healthcare access and delivery for all women of Ontario whose pregnancies are complicated, and to [2] develop an organized approach to healthcare delivery and planning by establishing a system of accurate and precise measure and evaluation of clinical outcomes associated healthcare use and resource allocation involving pregnant women whose babies are diagnosed with birth defects, our trans-disciplinary team (Program Leader: Dr. P. Kim) received a support from both federal and provincial governments through the Primary Health care Transition Funds ($1,877,500.00 for April 2004- March 2006) to establish an integrated and coordinated network for antenatal care involving all high-risk pregnancies. This will be accomplished by development of [1] regional coordination centers triaged by nurse practitioners to build regional capacity (Our team already has evidence to support that this building regional capacity has improved access and quality of care and patient satisfaction, [2] 1-800 telephone numbers to centralize and improve access, [3] a web-based patient education and information system, which will be used to provide educational information about pregnancy, birth defects and healthcare resources available to the patients, and [4] a web-based patient electronic charting network system. This web-based patient electronic charting network will [1] standardize and meet the patient care requirements for all relevant health care providers locally and regionally, [2] facilitate better communication and collaboration in real-time among primary-to-tertiary care givers including high-risk obstetrics, medical genetics, and pediatric sub-specialists by providing networking capability, and [3] allow timely critical analysis of de-identified overall health care access, delivery, clinical outcomes and resource use and allocation. The Fetal alert Network (FAN) program includes all programs/institutions involved in prenatal, perinatal and neonatal care in the province of Ontario; 5 perinatal programs, 8 genetic counselling centers, 5 PICUs, 8 level-3 NICUs, 25 level-2 NICUs, and 5 pediatirc surgical units, supported by all heads of Family Medicine units, Medical geneticist, midwifery, OBS/GYN, and pediatric sub-specialty units.

3. Stakeholders

1. Patient: In the present system, pregnant mothers carrying babies with birth defects are usually sent to a local secondary care giver who then refers to tertiary materno-fetal units. This is very difficult and confusing time for the mothers because of lack of available information, delay in access, duplication or redundancy in referral, and displacement from their own community setting into the myriads of tertiary care settings and information overload over short period. Establishment of the primary materno-fetal health care units will eliminate these challenges.

2. Primary care giver: In the current set up, the primary care giver in the community is frequently displaced following initial detection and diagnosis. The community-based materno-fetal health care network will empower and educate the delivery in the primary care setting. In addition, it will ensure the follow up and continuity of care or co-care in the context of family in the community. With expansion of the network into Northern Ontario, development of regional capacity through the FAN will coordinate and improve the access and quality of maternity care delivered.

3. Nurse practitioner: This new role is central to the proposed re-structuring. Each nurse practitioner will play the role of educator, counselor, facilitator, and administrator of the delivery of care. He or she will coordinate the access, streamline and accelerate the delivery, ensure the follow up and continuity of care. Each nurse practitioner in essence replaces the role of primary obstetrician, and assumes an expanded role of coordinating the care plan in close consultation with primary care givers and corresponding tertiary materno-fetal specialists. This role empowers the community based care and re-aligns the present system closer to the primary care setting.

4. Tertiary materno-fetal center: This new system will deliver more coordinated and organized approach to the tertiary centers, and unburdens the current backlog of ever increasing referrals. The community-based approach brings a balance and close consultation and collaboration among various levels of care givers across many disciplines.

5. Health care system: The ultimate beneficiaries of this new re-structuring are the mothers with babies having birth defects and our health care system. These babies with birth defects are rarely perceived at the time of initial detection as long-term consumers of health care. This re-structuring with the emphasis on community-based coordination and organization allows improved access, expedient delivery of health care, promotion of collaboration across various disciplines, more accurate measure of health care delivery, and effective and efficient delivery of health care hence, more cost-effective health care system. Furthermore, it will allow for the first time, proactive and prospective health promotion and illness prevention regarding birth defects.

4. Project Team:

The proposal represents an unprecedented opportunity of organization, coordination, and collaboration by all members of the healthcare team involved in the access and delivery of health care to pregnant mothers initially with babies who are diagnosed to have birth defects and eventually for all pregnant women in the province of Ontario. We at various levels of health care identify with the problem and share the plan and the goal to improve the access and delivery, to promote inter-disciplinary collaboration, and to develop opportunities to promote health and illness prevention. Although we, at tertiary centers have perspective on the challenges facing the current system of health care delivery, this endeavor is possible, only with full partnership and participation of the primary care providers. A number of us have collaborated and conducted clinical studies and trials on individual or regional basis previously, but this funding opportunity brings all levels of involved care providers as a team to improve the system. The strength of our team is not only in breadth, but in the depth of each individual member at various levels of health care, from primary to tertiary. All participants have experience in running multi-disciplinary projects or carry multiple clinical and basic science peer-reviewed grants. The participating heads of the primary care programs in Ontario are nationally recognized with international reputation.

5. Status Report and Timetable:

The project consists of three phases. The Phase 1 is **Preparation and pre-implementation phase**. The duration will be present until the end of 2004. Six community-based materno-fetal health care units will be established, website will be posted, public announcement will be communicated, and first survey will performed to establish a pre-implementation baseline consumer/provider satisfaction survey. The Phase 2 between January, 2005 and December, 2005 will be **Implementation and execution phase**. The service will be provided and a second consumer/provider satisfaction survey will be conducted following 1 year of implementation. More complete service and data analyses will be performed in the second half of the second year in preparation to secure more permanent funding strategy for the program. The Phase 3 between January 2006 and March, 2006 will be **Review and analysis period**. The outcome analysis will be published and communicated to all stakeholders.

6. Urgent Need for Ministry Partnership:

We have done an environmental scan of the maternity care in the province by visiting and meeting with all the partners to assess their status, needs and shared plan for improvement in the context of the network. We identified three major areas where we can immediately improve the health care system delivery.

[1] We have established a partnership with the Ontario Medical Association, particularly with the Antenatal care committee. They are onboard with our shared plan and we can put and improve the use of OMA antenatal forms 1 and 2 by developing web-based system on the same platform with the FAN platform.
[2] We have established a partnership with Niday perinatal and Maternal serum Screening database and we are in discussion to develop a neonatal follow up module with the Niday, which will provide for the first time a seamless coordinated maternal and fetal care from antenatal to perinatal to neonatal care in the province. In addition, we propose to consolidate both databases under one roof.
[3] We have developed a Northern Ontario strategy to build regional capacity and improved and coordinated care for initially complicated and for all pregnancies, especially given the lack of primary maternity care and access issue in the region. We have already developed a partnership in Manitoba, which look after most of spillover from north-western regions of Northern Ontario. In addition, we have established a partnership with The Northern Network which provides telemedicine link to Northern Ontario.

7. Returns in Healthcare Investment for Maternity Care in Ontario

There is growing needs for integrated comprehensive maternity care in Ontario for both complicated and normal pregnancies. The establishment of this primary materno-fetal health care network is clearly essential and worthwhile investment in the health care since [1] it eliminates redundancy and duplication in the current system, [2] it increases access to primary care not only from the consumer perspective, but also from tertiary care back to primary care as well, [3] potential improvement in the quality and continuity of primary health care and concordant patient/provider satisfaction are clear and self-evident, and [4] it will further improve cost-effectiveness of primary and overall health care system through elimination of duplications and shifting and reallocation of higher unit cost resources from tertiary care into the primary care network.

The proposed community-based health care network compliments the strategic provincial and national interests regarding primary health care since it re-claims and emphasizes the prominent role of primary care, in particular, the role of nurse practitioners and integration and coordination of currently existing efforts in the context of health care network, and since it allows for the first time, a mechanism to identify potential factors in health promotion and illness prevention regarding birth defects.

Our group is in unique position to have the context and perspective on this patient population, their needs, and acute and long-term impact on current poorly coordinated unorganized health care access and delivery. The re-structuring of health care proposed in this document will not only improve our current system, but will set a bench marking for community-based materno-fetal care for pregnant mothers all over the world.

I enclose a detailed budget for immediate project requests and for a long-term sustainable support for the program for next 5 years. Considering the fact that Ontario spends ~ 4 million dollars a year just for coordination and integration of cancer care provided for total of ~2500 children each year, I implore the Ministry and Women's Council to consider providing a support for our program which provides integrated and coordinated oversight for comprehensive provincial system of maternity care, and which has significantly greater medical, socio-economic and political impact on our system.

On behalf of our team, I thank you and the Council in advance for consideration and support.

Kindest regards,

Peter Kim

Fetal Alert Network Newsletter

Fall 2004 Volume 1 Issue 1

Antenatal Care and Birth Defects

Most pregnancies result in the birth of a healthy baby, and outcomes at the time of birth relating to the health and wellbeing of both mother and baby are determined by the type and quality of antenatal care provided during pregnancy. This is particularly true for complex pregnancies and unborn babies with birth defects. Recent advances in prenatal screening, diagnostic technology, and therapeutic intervention now influence the very nature and natural history of some of these complex conditions. In Ontario, knowledge about how this important aspect of the health care system performs is very limited.

Birth defects are the leading cause of infant mortality, accounting for 25 to 30% of paediatric hospital admissions, and contribute substantially to childhood morbidity and long-term disability. Major birth defects occur in 1 to 5% of live born infants. This represents 1,300 to 6,600 infants per year in Ontario.

Comparatively, there were 2,500 children 0 to 14 years of age treated for cancer in Ontario in 2003. The Ontario Maternal Serum Screening Program, established in 1993, covers about 50% of pregnancies. Unfortunately, 10 to 20% of babies born with defects are either undiagnosed or misdiagnosed until late in the pregnancy.

Ontario accounts for 39% of Canada's live births, yet at no level throughout the health care system is there discussion regarding the systematic approach to the delivery of complex antenatal care. There is no population-based surveillance system that monitors the incidence, outcomes, and care of infants with birth defects. One cannot manage well what one does not measure well. An integrated system of monitoring for birth defects will allow for appropriate policy planning, responsible allocation of resources, and efficient delivery of care.

The Fetal Alert Network

The Fetal Alert Network is funded by the Ontario Primary Health Care Transition Fund through the Ministry of Health and Long Term Care. The primary goal is to establish a **provincial network** of health care delivery units to care for pregnant women with babies diagnosed with a birth defect.

Responding to the Ministry's commitment to support primary care initiatives, the project team's mandate is to create a provincial network of maternal-fetal care services by:

- establishing a single point of entry for patients and primary health care providers;
- developing a common patient data form;
- facilitating regionalized care and improving communication between primary and tertiary care providers, and;
- developing a network database.

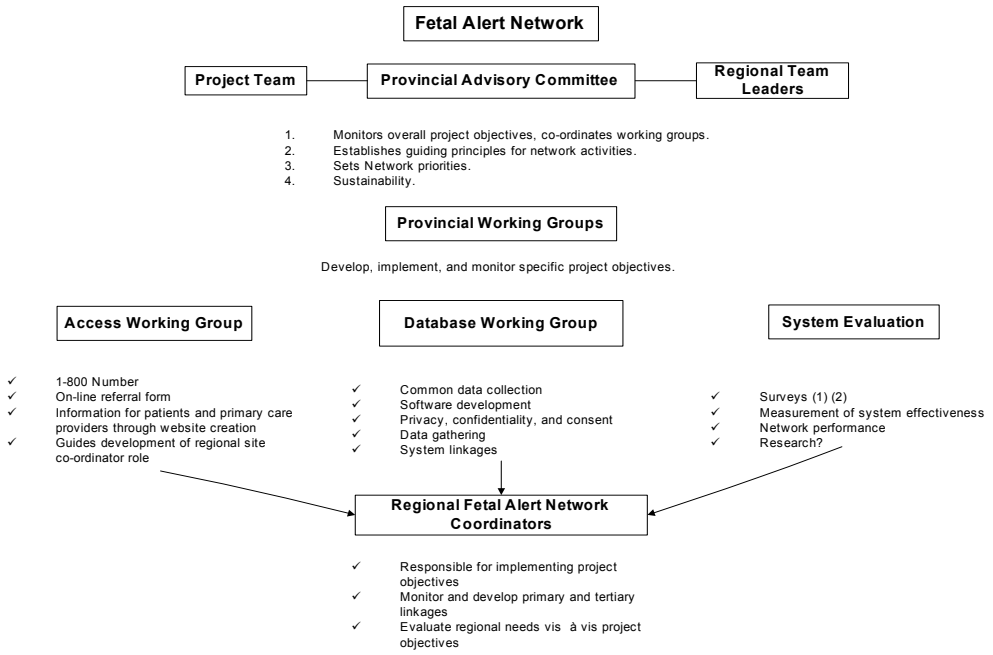
Project Status Report

The first quarter objectives were focused on establishing a project infrastructure including hiring key personnel, obtaining office space, and project planning. The second quarter focused on completing an environmental scan, establishing regional teams, and achieving provincial commitment and consensus to project goals and participation. Some key project milestones include:

- completion of a Primary Care Provider Pilot Survey;
- convening for the first provincial Fetal Alert Network meeting and creating provincial working groups, and:
- Completion of contract negotiations for research, Environics Research Group Ltd., and database software and website development, Rincon Technologies Inc.

The Internet is now the second most common source for Canadians to get health information, ranking ahead of radio, television and newspapers and surpassed only by face to face contact with a health professional.

Organizational Chart



Working Group Recommendations

Access

Improving access quality is a core project initiative and the main focus of this group's recommendations at the June meeting. These recommendations formed the basis for creating the role description for the Fetal Alert Network Regional Site Coordinators. The coordinators will function in an enhanced nursing role and focus on local development, integration and support for primary to tertiary linkages. They will also assume responsibility for the implementation of Fetal Alert Network initiatives. The role description was developed and approved by the Project Team and Regional Team Leaders. To date Fan Coordinators have been hired from London, Ottawa, and Toronto. Hamilton and Kingston are in the process of advertising and hiring for these positions.

The provincial 1-800 Number Proposal and the Provincial Referral Form were also developed from this group's recommendations. The draft documents have been circulated to the Regional Team Leaders for further discussion and approval.

At the June meeting, the framework for the Fetal Alert Network website was presented. See below for further highlights.

Database

System performance and disease surveillance is a second core project initiative. The Fetal Alert Network database will allow for population-based information to be prospectively collected and analyzed from conception to neonatal outcome. This initiative will establish both clinical and administrative benchmarks and ultimately improve health care for all pregnant women in the province.

With stakeholder input, the Project Team has focused on minimizing duplication and working with existing systems, processes and databases. A draft framework and data elements have been developed and these will be forwarded for review. A database prototype will be presented at the upcoming Regional Team Leaders Meeting in November in Kingston, Ontario.

Evaluation

Patient and provider satisfaction with system performance is the final core project initiative. The completion of a pre- and post-implementation survey assessing patient and primary obstetrical care is now underway. The patient survey is currently under development.

78% of Ontario Physicians are using the Internet for professional reasons.

Web sites doctors most commonly access:

- *77% Disease-specific sites*
- *31% Government sources*
- *21% Consumer-focused information*
- *20% Medical association pages*
- *8% Commercial health sites*

www.fetalalertnetwork.com

The College of Physicians and Surgeons of Ontario report that the top three barriers to the use of the Internet in practice are busy schedules, length of search times, and high volumes of information to sort through on-line.

All three of these barriers are related to time and timely access to information.

The Fetal Alert Network web site intends to serve as a portal for fetal health care in Ontario and thereby provide timely access to relevant information. Other objectives include:

- promoting awareness of fetal medical services offered by Fetal Alert Network partners, and;
- facilitating the referral process and communication (for example, posting common forms and clinical tools, creating an interactive message board, and fostering the exchange of skills and ideas.

The site will also feature updated on-line information about prenatal screening and diagnosis tests and procedures, as well as an interactive search tool for common fetal diagnoses.

The Fetal Alert Network hopes to prove itself unique with respect to the quality and relevancy of the information it offers its users and the referral and clinical support it provides for health professionals.

The Newsletter

This is the first issue of the Fetal Alert Network Newsletter. This newsletter has been created to disseminate information about Fetal Alert Network initiatives and to facilitate communication amongst health care providers who are involved in all aspects of prenatal diagnosis of birth defects, in utero treatment, postnatal confirmation, and management.

We are interested in your opinion as to what you would find useful. Please forward your comments, questions and suggestions for future issues to:

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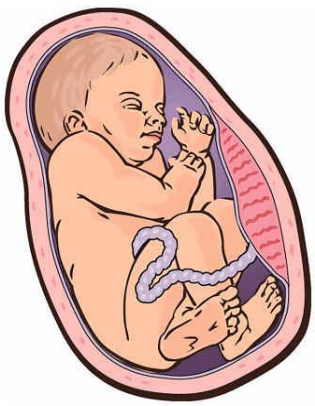

References

1. Canadian Health Network. *How Canadians find health information on the Internet*. Retrieved from www.canadian-health-network.ca on September 9, 2004.

2. Report: *Integrating Internet Technology into Physician Quality Improvement Initiatives: Use, Needs and Barriers: Ontario Physicians and the Internet.* Prepared by Davis D, Faulkner D, Gamble B, Wenghofer EF. The College of Physicians and Surgeons of Ontario, February 2003.

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Schedule K - Submission to Ontario Maternity Care Expert Panel
K-3 - Perinatal Psychiatry

To: Ontario Maternity Care Expert Panel members
c.c. Jane Pepino, Wendy Katherine, Elsa van Vliet,
Regional Perinatal Psychiatric Crisis Unit Proposal Steering Committee members
From: Diane de Camps Meschino MD FRCPC
Chair: Steering Committee, Regional Perinatal Psychiatric Crisis Unit Proposal
Re: **Perinatal Mental Illness: Addressing a High Risk Service Gap**

Further to recent contact with Jane Pepino and Wendy Katherine, following on page 2, please find a copy of the situation description originally sent to Ms Pepino and a request submitted to the Ontario Maternity Expert Panel.

Perinatal mental illness is the most common complication of pregnancy, affecting approximately 16% of mothers. It has potentially serious initial and ongoing ramifications for the mother, infant and the family as a whole.

An informal regional network works to coordinate care providers serving these women and their families. A gap in in-patient psychiatric crisis care is becoming increasingly problematic, and is being addressed by a Steering Committee developing a proposal for a regional perinatal psychiatric crisis unit. The Steering Committee consists of experts from a number of major centres, community providers and academics who have joined together to address this high- risk gap. International policy frameworks and best practice standards guide the work of the Committee.

The Steering Committee has not completed its work so is not in a position to present its final recommendations. Since the Expert Panel will be reporting soon, however, the Steering Committee requests that the Panel:

1. Confirm the importance of including needs for perinatal mental illness in requirements for the maternal newborn sector
2. Acknowledge the GTA's efforts to develop perinatal mental illness services that meet international standards, and the specific regional initiative to address a gap in inpatient perinatal psychiatric crisis care.

Please contact me if there are questions or if clarification is required.
Submitted with thanks,

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