Provincial Council for Maternal and Child Health
building a brighter future

Maternal-Newborn Gap Analysis

Rural and Remote Medicine Conference

Halifax, April 2019

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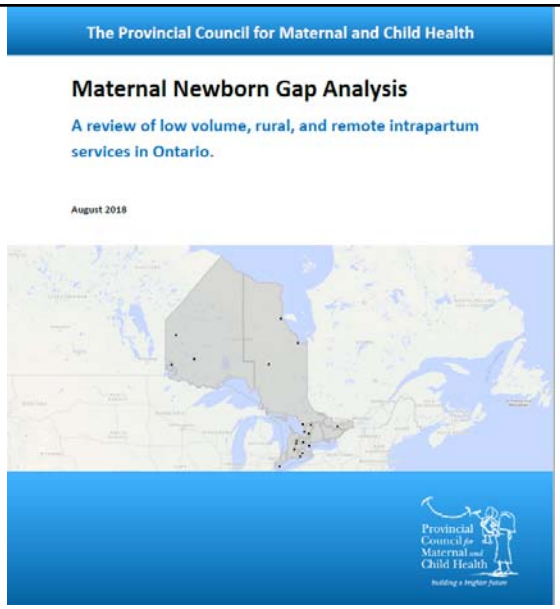

http://www.pcmch.on.ca/health-care-providers/maternity-care/pcmch-strategies-and-initiatives/maternal-newborn-gap-analysis/

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Project Team

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- *Thank you to the Better Outcomes Registry & Network (BORN) Ontario and the Institute for Clinical Evaluative Sciences (ICES) for supporting the data needs of this work.*

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Objectives

- Recognize the impacts of Ontario geography on access to care
- Describe patterns of care in rural and remote communities in Ontario
- Identify variations in models of care, staffing models and human resources strategy that help support rural intrapartum care
- Discuss the potential for regional maternal-child networks to contribute to sustainable intrapartum services

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Introduction

- Where are you working?
- The Provincial Council for Maternal and Child Health (PCMCH) initiative to support *Better Maternal-Neonatal Birth Outcomes* in the province
  - Transport
  - Prevention of preterm birth and stillbirth
  - Safer Birth
  - Low risk birth strategy
- To support this work, a gap analysis was undertaken focused on local access to safe, high-quality intrapartum care services in low volume, rural/remote centres.
  - Low Volume defined as:
    - Sites with less than 500 births per year

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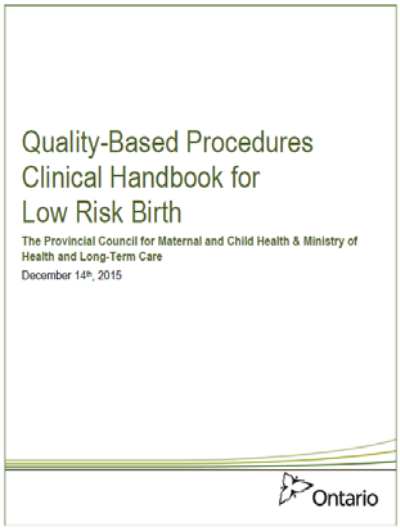

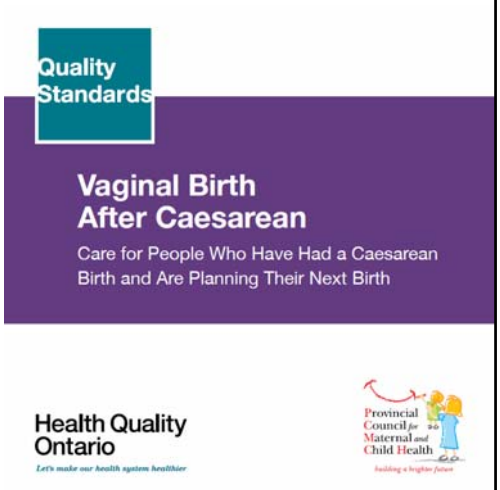

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- According to BORN Ontario:
- 11.4% of births occurred in Level 1a/b hospitals
- 43 of the province's 100 hospitals providing maternity care had birth volumes less than 500 per year
- Our survey identified 73 Level 1 hospital birth units with less than <500 per year and three birth centres

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Maternal Newborn Levels of Care

PCMCH Levels of Care resources

	Maternal	Newborn
Level 1	Midwife, Family Physician	Midwife, Family Physician
Level 2	Obstetrician	Paediatrician
Level 3	MFM	Neonatologist

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Level 1 - Maternal

- Extremely low risk
  - >=36 + 0 weeks
  - No complications
- Low risk
  - >=37 + 0 weeks
  - Suspected SGA only with consultation

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Level 1 - Maternal

- Level 1A and 1B based on C/S capability

Level 1A	Level 1B
No C/S	C/S 24/7
No twins	Uncomplicated dichorionic twins
No VBAC	Electronic monitoring
Informed consent	

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Level 1 - Newborn

- Not all centres currently meet minimum requirements
- Some very small volume centres will never be able to achieve minimum requirements
- In order to support Mother-Baby couplet care, ideally all centres should manage common newborn transitional problems
  - Thermoregulation
  - Hypoglycaemia
  - Jaundice
  - TTNB
  - Feeding difficulties
  - Antibiotic prophylaxis

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Level 1 - Newborn

- Centres need to be aware of local limitations and transfer out when appropriate
- Generally IV ⟶ transfer
- Mother-baby couplet care
  - Larger Level 2 or 3 centres should also strive to take care of Level 1 problems in Mother-Baby couplet care
    - Limits separation of mom and newborn
    - Reserves Level 2 and 3 capacity

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Methods

- Environmental scan of literature, professional statements, expert reviews of specific rural sites.
- Interviews with low volume, rural/remote intrapartum care settings.
- Data from the Better Outcomes Registry and Network (BORN) Ontario and the Institute for Clinical Evaluative Sciences (ICES) available by LHIN and low risk cohort.

Forthcoming:

- A distance map detailing the duration of time a pregnant person travels in order to receive intrapartum care services (by land and air).

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THE SAFETY OF RURAL MATERNITY SERVICES WITHOUT LOCAL ACCESS TO CESAREAN SECTION

APPLIED POLICY RESEARCH UNIT — FOCUSING ON RURAL HEALTH

2015-11-03 | An Applied Policy Research Unit Review

Commissioned by Perinatal Services BC, BC Women's Hospital and Health Centre & University Centre for Rural Health, Australia

By Jude Kornelsen, PhD (Director) & Kevin McCartney (Lead Researcher)
Review Team: Lana Newton, Emma Butt, Max McAlpine

Patients at the Centre: Sustaining Rural Maternity – It's All About the Surgery!

White Paper
November 2016

Putting patients first and fostering healthy rural communities through the collaborative planning, delivery, and evaluation of high-quality rural maternity and surgical services, delivered seamlessly across the continuum in integrated, team-based networks of care

Lee Yeates RM, MHM(c)
Perinatal Services BC

Western Provinces Collaborative on Sustainable Rural Maternity and Surgical Services

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Methods

Interviews

- Interview questions were developed to gather information on the following:
  - The intrapartum services and structures currently available to the community
  - Notable characteristics of the community
  - Challenges for maternal/newborn care in the community
  - Staffing models and maintenance of competencies
  - Other needs to maintain/grow intrapartum care services in their community
  - Community, Regional and LHIN engagement

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Interview Sites

Total Participating Intrapartum Care Sites N=16 (Interviews N=14, Email N=2)			
Hospitals			
LHIN	**Organization**	**Level of Maternity Care**	**Number of Births/Year**
1	Erie Shores Health Care – Leamington District Memorial Hospital	1b	251-500
2	Huron Perth Healthcare Alliance: Stratford General Hospital Site*	 2a	 1001-2400
3	North Wellington Health Care: Louise Marshall Hospital – Mount Forest, and Palmerston District Hospital	 1a 1a	 ≤100 101-250
4	Norfolk General Hospital – Simcoe	1b	251-500
5	Headwaters Health Care Centre – Orangeville Site	1b	501-1000
11	Almonte General Hospital	1b	251-500
12	Georgian Bay General Hospital – Midland (*and* Orillia Soldier's Memorial)	1b (2c)	251-500 (501-1000)
12	Muskoka Algonquin Healthcare – Huntsville	1b	101-250
13	Weeneebayko Area Health Authority – Moose Factory	1a	101-250
13	Notre Dame Hospital – Hearst	1a	≤100
13	West Parry Sound Health Centre	1b	101-250
14	Sioux Lookout Meno Ya Win Health Centre	1b	251-500
14	Lake-Of-The-Woods District Hospital – Kenora	1b	201-250
Birth Centres or Other			
LHIN	**Organization**	**Level of Maternity Care**	**Number of Births/Year**
7	Toronto Birth Centre	N/A	525 admissions
4	Tsi Non:we Ionnakeratstha Ona:grahsta Six Nations Maternal and Child Centre - Oshweken, Ontario	N/A	100 births
13	Neepeeshowan Midwives, Attawapiskat (part of Weeneebayko Area Health Authority)	N/A	60 Pregnancies, 12 births

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Geographic Spread of Interview Sites

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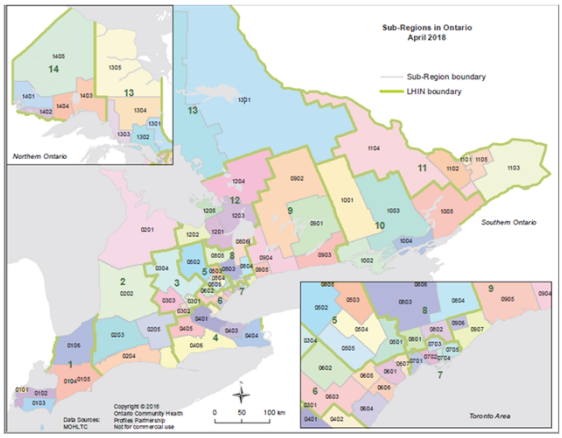
Methods

Data

- Data was obtained from BORN and ICES to provide quantitative context to the qualitative analysis.
- 'Low Risk' was defined as Robson Classification 1-4.
- Data compared at the LHIN and LHIN Sub-Region levels where possible.
- Worked with BORN to create a distance to care map



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Findings

Population Characteristics

- All of the sites interviewed identified population characteristics that shaped the care provided to their communities.
  - Low socioeconomic status
  - Indigenous, Mennonite, Amish, refugee and Francophone communities
  - Substance use
  - Low maternal age
  - Lack of access to public transit or personal transportation
  - Significant distances to travel to access care

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Findings

Access to Care: Geography, Demographics

- Travel times of up to one hour are common.
  - Some much longer, including more than one mode of transportation, i.e. ferry and car, plane.
  - In most remote Indigenous communities people have to leave home to give birth
- Many issues with regards to access to transportation
  - Total lack of transportation, no transit system or taxi services, lack of funds to pay (taxi), dependence on others.
- Weeneebayko Health Authority and Sioux Lookout service their immediate areas but also receive the majority of fly-in patients from northern Ontario.

It can be logistically and financially difficult to access services. It can also be emotionally difficult for people to leave their communities and families for prolonged periods of time.

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MANITOBA
ONTARIO
QUÉBEC
U.S.A
Winnipeg
Moose Factory/Moosonee
Kenora
Sioux Lookout
Thunder Bay
Timmins
Sault Ste. Marie
Greater Sudbury
0 200 km
0 100 mi

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Findings

Access to Care: Clinical Decision Making

Geographical limitations can impact a care provider's decision making

- Low intervention approach with risk screening
- Lower threshold for induction and CS
- Some pregnant people opt for repeat elective CS
- BORN data show highest induction rates (in low risk women) in rural and remote LHIN sub-regions.

LHIN Sub-Regions with HIGHEST Induction Rates in Low Risk Women	LHIN Sub-Regions with LOWEST Induction Rates in Low Risk Women
Cochrane – 41%	Scarborough North – 19%
James and Hudson Bay Coast – 40%	Eastern York Region – 20%
Lambton – 39%	District of Rainy River – 22%
Rural Hasting – 39%	North York Central – 24%
Quinte – 38%	Brant – 25%

Source: BORN Ontario
Low Risk Women defined as Robson Classification 1-4

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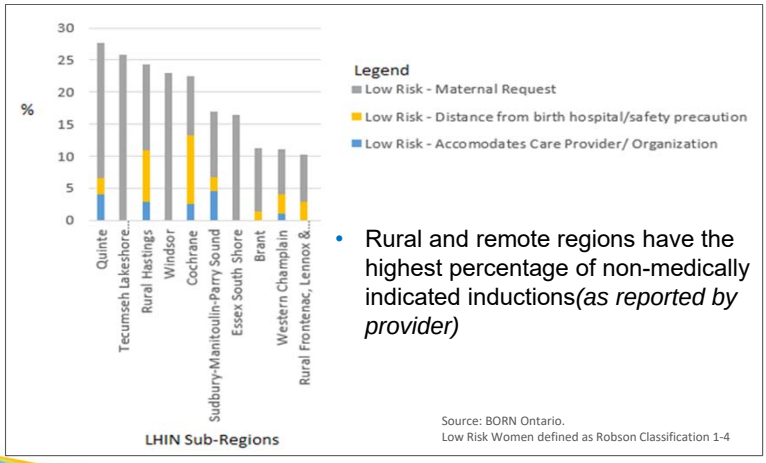
Findings

Access to Care: Clinical Decision Making

LHIN Sub-Regions >10% Inductions performed for non-medical indications in low risk women (2013-16)



- Rural and remote regions have the highest percentage of non-medically indicated inductions*(as reported by provider)*

Source: BORN Ontario.
Low Risk Women defined as Robson Classification 1-4

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BORN

TWO BIRTH EXPERIENCES IN ONTARIO

Wide variation exists in the use of interventions during labour and birth across Ontario hospitals.

Some variation is due to the level of care needed to support safe birth when complications arise. However, for healthy pregnant women with no labour complications, birth experiences should be similar.

KATIE and JULIA are both expecting their first child, have similar healthy, low-risk pregnancies and give birth in a hospital with over 500 births/year (n=57 in Ontario). **How different are their births?**

INDUCTION	CESAREAN BIRTH (C/S)	EXCLUSIVE BREASTFEEDING (EB)
Medication and other techniques are sometimes used to initiate contractions when labour doesn't start on its own. In low-risk pregnancies, induction should only be used when the pregnancy continues beyond 41 weeks of gestation.	A cesarean section is a surgery in which a baby is delivered through an incision in the mother's abdomen. When not medically necessary, cesarean delivery should be avoided to reduce post-surgical complications and reduce the likelihood of needing a cesarean delivery in a future pregnancy.	Breast milk is the best food for babies. It helps with brain development and helps protect infants from infectious illness. Hospitals should support and encourage new mothers to initiate exclusive breastfeeding so that it is well-established by the time mothers and babies are discharged from the hospital.
Lower rate is better	**Lower rate is better**	**Higher rate is better**

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BORN

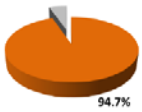
KATIE: Hospital A

Top 10% range in performance

KATIE gives birth at the *highest-performing* hospital. The likelihood that she will have these experiences is:

Induction: (9.5% to 17.8%)

C/S: (10.5% to 14.9%)



EB: (86.1% to 94.7%)

JULIA: Hospital B

Bottom 10% range in performance

JULIA gives birth at the *lowest-performing* hospital. The likelihood that she will have these experiences is:

Induction: (31.9% to 42.4%)

C/S (24.0% to 33.0%)

EB: (35.5% to 48.3%)

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Findings

Access to Care: Transfers

- Most centres use CritiCall and/or relationships with other centres to facilitate transfers.
  - Both methods were noted as being inefficient at times
- Barriers and delays to transfer included:
  - Weather
  - Lack of available staff for the transfer
  - Lack of relationship with transferring centre
- BORN data demonstrates that in most cases preterm babes (<36 weeks) are not being delivered in Level 1 hospitals.

It appears that pregnancy risk screening and transfers in labour from Level 1 centres are largely successful re PTB

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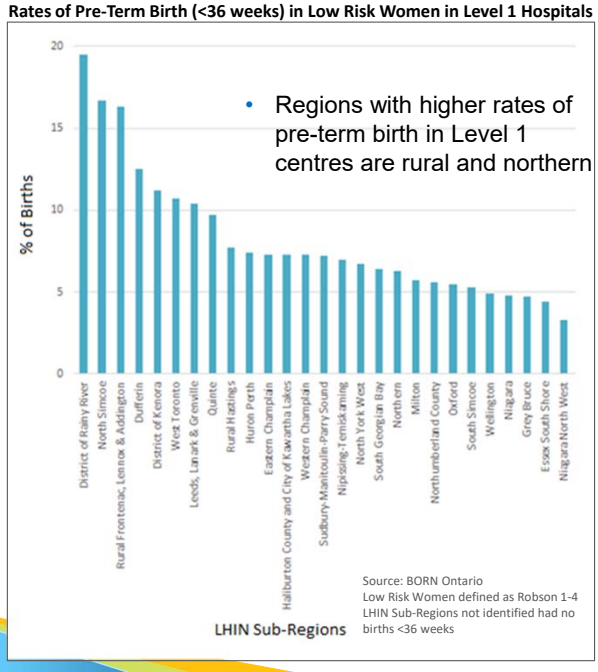
Rates of Pre-Term Birth (<36 weeks) in Low Risk Women in Level 1 Hospitals



- Regions with higher rates of pre-term birth in Level 1 centres are rural and northern

Source: BORN Ontario
Low Risk Women defined as Robson 1-4
LHIN Sub-Regions not identified had no births <36 weeks

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Findings
Models of Care

There are many diverse models of care currently in practice

- Family Physicians only
- Midwives only
- Obstetrics and specialist coverage
- Multiprofessional or interprofessional
- Dependent on the health care providers available in the community, volumes, culture, eco-system of services
- Nurses often cross-trained in other units, often with very diverse patient mix.

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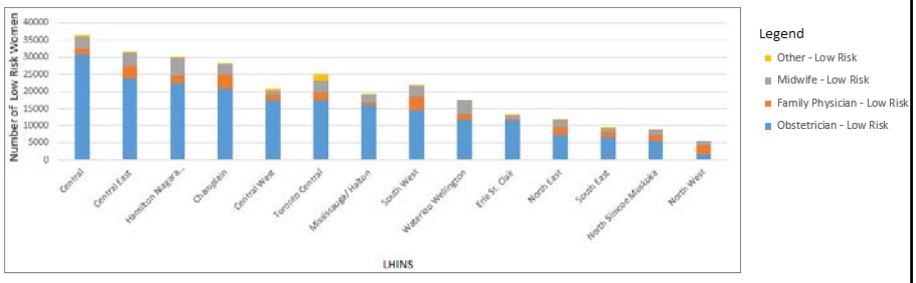
Findings
Models of Care: Admitting HCP

Admitting Health Care Providers of Low Risk Women by LHIN of Residence, 2013-16



- Most low risk births admitted by OBs, with approximately equal numbers of births admitted by FPs and MWs

Source: BORN Ontario.
Low Risk Women defined as Robson Classification 1-4

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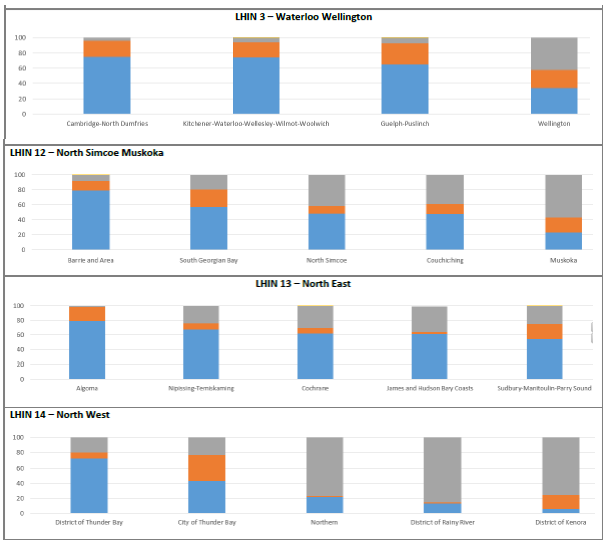
Variation within LHINs

Family Physician

Midwife

Obstetrician



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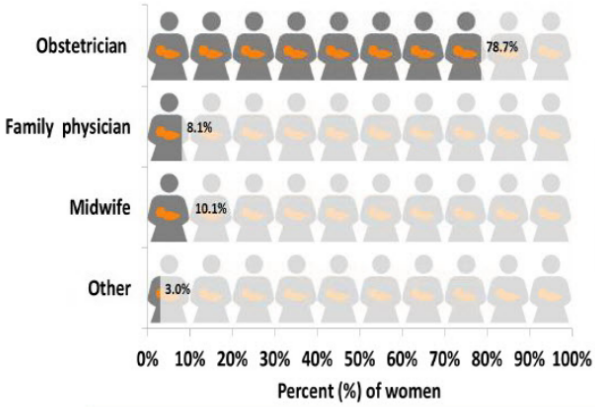
Distribution of Health Care Provider Attending Births

(Ontario, 2014-2015 to 2015-2016)



Did you know?

In 2014-2016, obstetricians attended the births of almost 80% of Ontario women; this rate decreased slightly compared with 81.7% in 2012–2014. The proportion of births attended by a midwife has steadily increased to 10.1% from 8.9% in 2012–2014.

Data source: BORN Ontario, 2014-2015 to 2015-2016
Definition of indicator: Distribution of type of health care provider who attended the birth, expressed as a percentage of the total number of women who gave birth. The calculation was based on the element of 'health care provider who caught baby', not the element of 'billable course of care midwifery' in BORN data.

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BORN Ontario

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Findings

Models of Care: Limitations on Services

- Most centres offered 24/7 access to caesarean section
  - Family Physicians with extended training
  - General Surgeons
  - Obstetricians
- Some noted difficulty in sustaining 24/7/365 physician coverage, especially with regards to anesthesia.
- Most centres offered 24/7 access to epidural anesthesia
  - Some reluctance of staff to offer epidurals in labour, although would provide for planned caesareans
  - Some northern centres relied largely on narcotic pain relief and this worked well for their communities.

Caesarean Section and epidural anesthesia are largely available across the province

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Models of Care: Limitations on Services

- Several centres reported more demand for midwifery than could be met by their current complement.
- Many reported cuts resulting in lack of lactation support.

Some sites provide safe care without local access to caesarean section and epidural anesthesia

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Family Medicine Model

- Meno Ya Win Health Centre Sioux Lookout
- Family physicians provide comprehensive maternity care
- 450-500 births per year
- No on-site specialists
- Team is trained to provide family medicine anesthesia, surgery and pediatric care.
- Provide services for the 85-90 remote fly in communities of Ontario's North West LHIN
- People have to leave home to give birth, often for weeks or months.

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Midwifery Model

- Neepeeshowan Midwives (Attawapiskat) are the only intrapartum care providers for this remote Cree community.
- Care for about 60 pregnancies and attend 12 births per year.
- Work closely with physicians at the Moose Factory site of the Weeneebayko Health Authority.
- The midwifery practice in Attawapiskat has allowed consistent local prenatal and postpartum care from known providers, training of local health workers, and increased access to local intrapartum services.
- There are currently proposals to expand the midwifery service in both Attawapiskat and Moose Factory promised to increase access to local intrapartum care.

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Multiprofessional Model

- Almonte General Hospital - Level 1b
- 2 obstetricians, 10 midwives and 4 family doctors.
- 400 births per year with 30% attended by the midwifery team.
- Obstetricians cover one weekend per month with a stable team of locums who assist.
- Nurses are cross trained and float between covering obstetrical and medical/surgical patients.

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Interprofessional Model

- West Parry Sound health Centre (Level 1 a)
- 6 family physicians and 3 .5 FTE midwives provide intrapartum care
- 100 births per year about equally divided between FPs and RMs.
- The midwifery team participates in the on-call rotation to cover family medicine patients.
- Nurses act as the second attendant at births with midwives for both hospital and home births, a model which helps the nurses maintain their intrapartum skills.
- The midwifery team has privileges at both West Parry Sound and Orillia Soldier's Memorial Hospital (Level 2).
- When family medicine patients need to give birth in Orillia due to risk factors the midwives can provide local prenatal care and intrapartum care in the Level 2 hospital, with appropriate on-site consultation as needed.

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Findings

Human Resources

- Many used standardized education programs in the past, but found them too expensive to maintain.
- Some send nursing staff to train in a larger (higher volume) centres.
  - This poses a challenge for staffing and is expensive
- Mandatory competencies and certifications (i.e. Neonatal Resuscitation Program) are ensured.
- Some Regional Networks play a role in helping sites to maintain competencies/provide training.

There is significant vulnerability with staffing, maintaining competencies, and high turnover rates

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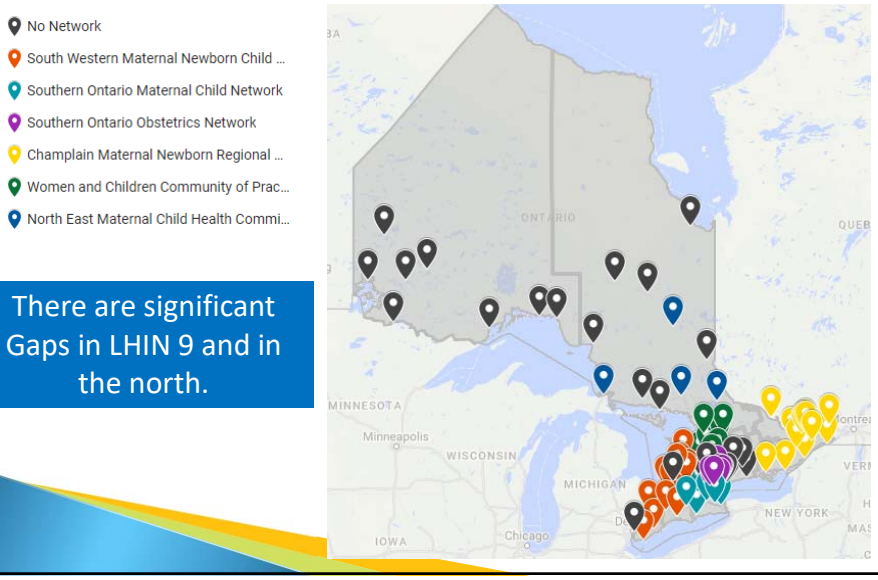
Regional Networks: Current Coverage



There are significant Gaps in LHIN 9 and in the north.

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Regional Networks: Current Coverage

- Champlain Maternal Newborn Regional Program (CMNRP)
  - Midwifery
  - Public Health
  - Community Health Centres
- North East Maternal Child Health Committee (NEMCHC)
  - Pubic Health
  - Children's Treatment Centres
  - Child and Youth Family Services
- Southwestern Maternal Newborn Child & Youth Network
  - Midwifery
  - Public Health
  - Home Care
- Southern Ontario Maternal Child Network (SOMCHN)
  - Midwifery
  - Public Health
  - Community Health
  - Family Medicine
  - Southern Ontario Obstetrical and Neonatal Network (SOONN)

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Findings
Regional Networks

- The concept of regional networks was not familiar to all of the sites interviewed.
- Hospitals that were engaged in networks discussed benefits such as providing connections with higher levels of care that could help with training/competency maintenance.
- Those not familiar with networks discussed their potential to facilitate transfers, support evidence informed/consistency of practice, and support real-time dissemination of knowledge.
- Both horizontal and vertical networking and bi-directional learning were seen as important

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Findings

Regional Networks: Caveats

- Concerns regarding current boundaries/jurisdictions.
  - Maintain what is currently working even if it does not "fit"
- Do not disturb the informal networks that are currently working well.
- Ensure funding is equitable for all hospitals/networks.

Regional Networks were acknowledged as being valuable, but they should not interfere with current/informally occurring networks

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Recommendations

Geography and Access to Care

- Ongoing provincial monitoring of access to care issues, including maternity service closures, would be prudent.
- A systematic approach to increasing options for intrapartum care services where it is safe and sustainable is recommended.
- Health care workers and community members from communities without access to intrapartum care should be included in further work on access to care in rural remote and Indigenous communities.

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Recommendations

Models of Care

- Support for interprofessional models of care of may increase sustainability, contribute to quality and relieve recruitment and retention pressures. These models need to take into account different staffing compositions for different communities.
- Family physician and midwifery services supported through strong referral relationships can increase access in communities without local intrapartum services and should be supported.
- Support should be provided for access to CS in Level 1a/b centres whenever possible including support for family medicine surgery programs and use of midwives as surgical assist.
- Support should be provided for development of safe intrapartum services without access to surgery where appropriate.

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Recommendations

Human Resources

- Small centres require support for recruitment and retention of staff.
- Small centres require support for maintenance of intrapartum skills, ongoing certifications and the implementation of quality improvement programs.
- Open dialogue about barriers to interprofessional approaches is needed – including maintaining strong FP primary care teams, funding models

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Recommendations

Regional Maternal-Child Networks

- Complete provincial coverage is required, being mindful of the informal networks, relationships and referral patters that already exist.
- Small centres should be involved in the development of the networks.
- Ensure understanding of the benefits, challenges and supports required to provide local access to intrapartum services.
- Ensure understanding of local social and cultural issues and the need for culturally safe care for the local population.
- Respond to the recommendations of the Truth and Reconciliation Commission and the SOGC regarding the education and retention of Indigenous health professionals and the return of birth to rural, remote and Indigenous communities.

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Recommendations

Provincial and Regional Network Quality Metrics

- Variables related to distance and access to care should be taken into account when reviewing regional or provincial quality metrics.
- An analysis of maternal and neonatal transfer data and risk screening practices would further inform expansion of intrapartum services closer to home.
- The inclusion of medical evacuation flight times into is needed to understand the realities of transfers from remote regions of the province.

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Conclusions and Discussion

- Very positive response from PCMCH Council
- Obvious need to raise awareness and knowledge based re rural and remote maternity care

- Input is welcome
- Did we miss the mark on any issues?
- What resonated?
- Advice re next steps?

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Thank-you

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http://www.pcmch.on.ca/

www.bornontario.ca

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