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Research Report | November 2024

Delivering Solutions: An Action Plan for Sustaining Rural Birthing in Northern Ontario

NORTHERN POLICY INSTITUTE | INSTITUT DES POLITIQUES DU NORD

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By: Eliseo Orrantia and Iain R. Lamb

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NPI – Who We Are

Land Acknowledgement

NPI would like to acknowledge the First Peoples on whose traditional territories we live and work. NPI is grateful for the opportunity to have our offices located on these lands and thank all the generations of people who have taken care of this land.

Our Main Offices:

- Thunder Bay is on Robinson-Superior Treaty territory and the land is the traditional territory of the Anishnaabeg and Fort William First Nation.
- Kirkland Lake is on the Robinson-Huron Treaty territory and the land is the traditional territory of Cree, Ojibway, and Algonquin peoples, as well as Beaverhouse First Nation.

We recognize and appreciate the historic connection that Indigenous peoples have to these territories. We support their efforts to sustain and grow their nations. We also recognize the contributions that they have made in shaping and strengthening local communities, the province, and Canada.

Permission Statement

This report was made possible through the support of our many partners. Northern Policy Institute expresses great appreciation for their generous support but emphasizes the following: The views expressed in this report are those of the author and do not necessarily reflect the opinions of the Institute, its Board of Directors, or its supporters. Quotation with appropriate credit is permissible.

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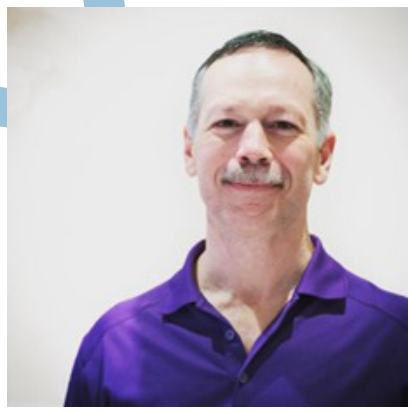

Eliseo Orrantia, MD, MSc, is a Professor at Northern Ontario School of Medicine (NOSM) University and a longtime rural generalist physician in the Northern Ontario community of Marathon. He is one of two physicians in this community that provide labour and delivery services. Eliseo has an ongoing interest and involvement in rural obstetrics research as a tool for advocacy. His firsthand experience and scholarly work provide an informed perspective, advocating for sustainable solutions to ensure the continuation of this essential health-care service for rural communities in Northern Ontario.

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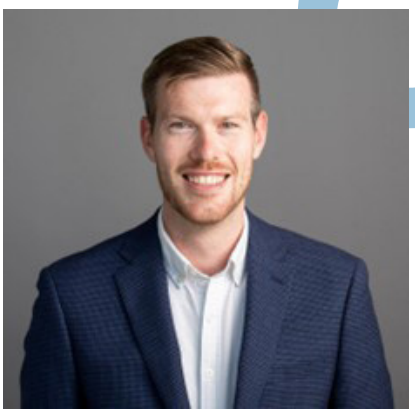
Iain R. Lamb, PhD, is a senior research associate at the Northern Ontario School of Medicine (NOSM) University. His research is primarily focused on identifying strategies to improve health-care access, elevate care standards, and enhance the recruitment and retention of health-care staff in Northern Ontario's rural communities. Collaborating closely with health-care practitioners, policymakers, and the communities in question, Iain is committed to formulating practical strategies to ensure that all residents in these areas have access to care.



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Glossary of Terms

A

Academic Institution - An educational institution dedicated to education and research, which grants academic degrees.

Adverse Outcome - See "Negative Outcome."

Amniotic Embolism - A potential catastrophic complication of pregnancy when amniotic fluid or other debris enters the maternal pulmonary circulation and causes cardiovascular collapse.

C

Cesarean section - The surgical delivery of a baby through a cut made in the mother's abdomen and uterus.

Competency-based training - Learning model where students must demonstrate the required level of knowledge and skill on a task prior to advancing to the next one.

Continuing Medical Education (CME) - Consists of educational activities that serve to maintain, develop, or increase the knowledge, skills, and professional performance and relationships that a physician uses to provide services.

E

Eclampsia - When a person develops seizures during pregnancy. These seizures are not related to an existing brain condition.

F

Family Doctor: See "General Practitioner."

Fee-for-service - A payment structure for physicians in which they bill their provincial health ministry a specified amount for each type of visit or procedure they perform.

G

General Practitioner (GP): A physician who provides a wide range of health-care services across the entire spectrum of care, regardless of patient age, sex, or condition. GPs are commonly referred to as a "family physician" or "family doctor."

H

High-Risk Pregnancy - A pregnancy where the mother and/or the fetus has an increased risk of adverse outcomes compared to uncomplicated pregnancies.

L

Labour and Delivery Services - The medical care provided for pregnant persons through the process of childbirth.

M

Maternal Care - Refers to all aspects of medical care during pregnancy, labour and delivery, and then postpartum.

Medical Learner - Includes both medical students and recently graduated students that are participating in the apprenticeship stage called residency.

N

Negative Outcome - In health care, it is an adverse event that occurs with medical treatment, which can include medication side effects, injury, psychological harm or trauma, or death.

Neonatal Intensive Care Unit (NICU) - A dedicated hospital department providing specialized medical care for the severely ill or premature newborn.

Northern Maternal Child Network (NMCN) – Regional network established in 2021 to create an integrated system of care to transform the delivery of care, and outcomes, across the maternal and child health continuum of the Northern Region.

Northern Ontario - The geographic region of the province of Ontario stretching north of the French River, Lake Nipissing, and the Mattawa River.

O

Obstetrics - The study and care of pregnancy, childbirth, and the period following delivery.

Obstetrician/Gynecologist (OB/GYN) - Combination of two medical specialties: obstetrics, which involves care during pregnancy, childbirth, and the period following delivery; and gynecology, which concentrates on the health of the female reproductive system.

Out-of-Pocket (OOP) Cost - Expenses for medical care that aren't reimbursed by insurance.

P

Prenatal Care - Medical care received during pregnancy and prior to the process of labour and birth.

Premature Birth - Babies born alive before 37 weeks of pregnancy are completed.

Preterm Birth - See "Premature Birth."

Positive Outcome - In health care, this refers to an event resulting from a medical intervention that leads to the preservation of life, or the enhancement of mental, physical, or social well-being.

R

Rural - Rurality is generally perceived as a socially constructed phenomenon with a variety of definitions. For our purposes, we adopt the definition provided by the Rural and Northern Health Care Panel. According to this definition, a rural community in Ontario is identified as one that has fewer than 30,000 residents and is located more than 30 minutes' travel time from any community exceeding 30,000 in population.

Rural Coordination Centre of British Columbia (RCCbc) - An organization in British Columbia that works with government, health authorities, health organizations, and University of British Columbia's faculty of medicine to coordinate rural resources at a provincial level. Led by rural doctors, it is a network that improves the health of rural people and communities.

Royal Australian and New Zealand College of Obstetricians and Gynecologists (RANZCOG) - The lead standards body in women's health in Australia and New Zealand, with responsibility for postgraduate education, accreditation, recertification, and the continuing professional development of practitioners in women's health, including both specialist obstetricians and gynecologists and general practitioner obstetricians.

S

Obstetrics Shared Care Practice Model - Where care for a pregnant person is divided between the combination of a family physician, midwife, and/or obstetrician. Responsibility is held by all involved.

Stillbirth - When a fetus dies in the womb after 20 weeks of pregnancy.

Society of Rural Physicians of Canada (SRPC) - National medical society in Canada that represents Canadian rural physicians.

Society of Obstetricians and Gynaecologists of Canada (SOGC) - National medical society in Canada, representing obstetricians/gynaecologists, family physicians, nurses, midwives, and allied health professionals in the field of sexual reproductive health.

T

Telemedicine - The remote diagnosis and treatment of patients by means of telecommunications technology.

Tertiary Care Centre - A facility that provides specialized health care typically for inpatients and based on a referral from a primary or secondary care provider.

Truth and Reconciliation Commission of Canada (TRC) - An independent body, active from 2008 to 2015, that provided former students of residential schools, and anyone affected by the legacy of those schools, with an opportunity to share their individual experiences in a safe and culturally appropriate manner. It produced a final report that contained 94 calls to action across a wide range of areas, including child welfare, education, health, justice, language, and culture.

U

Undergraduate Medical Education (UME) - Educational program designed to provide the knowledge and skills necessary to become a medical doctor.

Upskilling: Additional education and training to develop new skills, knowledge, and expertise.

Uterine dehiscence - A gradual rupture of the muscles of the uterus without a rupture of the membrane surrounding the fetus. This can lead to rupture of the uterus and severe complications, including death, for the mother and fetus.

Abbreviations

CME	Continuing Medical Education
C-Section	Cesarean Section
GP	General Practitioner
NICU	Neonatal Intensive Care Unit
NMCN	Northern Maternal Child Network
NOSM	Northern Ontario School of Medicine
OB/GYN	Obstetrician-Gynecologist
OOP	Out of Pocket
RCCbc	Rural Coordination Centre of British Columbia
RANZCOG	Royal Australian and New Zealand College of Obstetricians and Gynecologists
SRPC	Society of Rural Physicians of Canada
SOGC	Society of Obstetricians and Gynaecologists of Canada
TRC	Truth and Reconciliation Commission of Canada
UME	Undergraduate Medical Education

Executive Summary

Despite the Ontario government's commitment to "... *giving you the right care in the right place and providing faster access to care*…", pregnant persons living in rural Northern Ontario continue to find that this commitment remains unmet. Today, only nine rural hospital sites supported by fewer than 35 rural generalist family physicians are providing labour and delivery services to the 50,000 rural Northern Ontarians of childbearing age. Twenty years ago, there were 20 rural hospital sites providing labour and delivery services. Twenty years before that, nearly every hospital in Northern Ontario had these services.

As labour and delivery services close, pregnant people in rural areas must travel increasingly greater distances to access the care they need, significantly increasing the risk of morbidity and mortality for them and their newborns. Medical travel also imposes substantial financial burdens. Annually, medical travel costs for pregnant persons in rural Northern Ontario are estimated to reach up to $5.7 million. The challenges and costs associated with accessing care are even more pronounced for Indigenous Peoples, who face systemic barriers and inequities within the health-care system, limiting their ability to receive timely and culturally safe care.

The provincial health-care system also faces significant financial costs stemming from poor access to labour and delivery care. The cost of neonatal ICU beds needed to manage complications arising from travelling for care alone amounts to $416,000, annually. This figure is a mere a fraction of the overall financial burden, as it does not include expenses associated with the long-term complications arising from delayed or inadequate labour and delivery care.

The growing maternity care desert in rural Northern Ontario poses severe consequences for the health and well-being of pregnant persons, and places considerable financial burden on the health-care system. Despite these challenges, little has been done to address this issue largely because the widespread closure of rural labour and delivery programs has occurred without a clear understanding of the underlying causes. This lack of insight complicates the development of effective strategies to support existing services, prevent further closures, and potentially reinstate discontinued programs. To align rural labour and delivery care with Ontario's health-care vision of "*...giving you the right care in the right place and providing faster access to care*…" it is imperative to identify the root causes of these closures. Only with this knowledge can effective solutions be formulated.

To bridge this knowledge gap, discussions with key stakeholders in rural labour and delivery care have revealed three major challenges threatening the sustainability of these services: 1) inadequate education and training, 2) lack of health human resources, and 3) insufficient collaborative support infrastructure. Solutions that were identified to address these challenges include:

1) Improving labour and delivery education and training: Education is critical for the proficiency of rural labour and delivery health-care teams. Establishing comprehensive education for medical and nursing learners through specialized programs, mentorship, and practical learning in rural environments is vital to ensure they graduate with exposure and competence in this field. Additionally, there is a need for sustainable funding of ongoing education for practicing physicians, nurses, and midwives, and for the creation of opportunities for advanced skills training (e.g., cesarean sections). This ensures that these providers have opportunities to maintain and expand their labour and delivery skills and competencies.

2) Increasing health human resources: Recruiting more skilled midwives, nurses, and physicians competent in labour and delivery care should occur through region-specific, evidence-based methods. Importantly, a regional retention strategy is needed to maintain and support current rural labour and delivery health-care workers, ensuring that they can mentor new staff and sustain care continuity.

3) Building supports: Collaboration among provincial and local governments, universities, local and regional health organizations, professional organizations, care providers, Indigenous communities, and patients can create system-level enablers for rural labour and delivery services in Northern Ontario. By developing a unified vision and priorities, it is possible to establish targeted infrastructure, policies, and programs. Visioning and creating together are essential for success.

Having identified the causes underlying the closure of labour and delivery services in rural Northern Ontario hospitals, and armed with potential solutions, there is now a pressing need to create a comprehensive strategic plan to ensure the sustainability and enhancement of labour and delivery services in the region. This requires fulsome engagement and input from all relevant partners, including patients, Indigenous Peoples, health-care providers, educators, health organizations, and government agencies. Their contributions are essential to refine and adapt these approaches to meet the specific needs of the rural North.

Selecting the right organization to lead the development of a strategic plan is vital for its success. The Rural Coordination Centre of BC (RCCbc) is a good example of an organization that has championed rural health care. It has been instrumental in advocating for rural labour and delivery services in its province, addressing service inequities, and initiating training and educational programs that strengthen the access and quality of this service. However, Ontario currently lacks an organization dedicated to championing rural health issues, including advocating for the sustainability of rural labour and delivery services. Of present organizations, the Northern Maternity Care Network (NMCN) stands out as a strong candidate to evolve such a strategic plan. With a core mission to improve health outcomes for the maternal-child population in Northern Ontario, NMCN aligns closely with the strategic plan's objectives to sustain and enhance labour and delivery services in rural areas. Their use of regional birthing data not only stands to strengthen the development process but also ensures that strategic directions are data-driven and tailored to specific needs of the maternal-child population in rural Northern Ontario. NMCN's extensive understanding of regional health-care challenges combined with their strong connections with key provincial stakeholders will ensure the strategic plan is comprehensive and in alignment with Ontario's broader health care objectives. Appointing NMCN to steer development is expected to enrich the planning process, leading to an integrated and responsive strategic vision that is needed for sustaining and improving rural labour and delivery services throughout Northern Ontario.

Transitioning from the action plan presented in this document to a regional strategic plan will require an estimated investment of $350,000 from the Ministry of Health, directed to the appointed lead organization. This funding will support regional needs assessment, key partner consultation and developing a cohesive and actionable strategic plan that is clear, measurable, attainable, and responsive to the needs of the region. This investment is not merely necessary; it is fundamental to support the development of a unified vision for rural labour and delivery services in the region and help provide the necessary guidance and direction to sustain and strengthen access to this care.

The successful implementation of the strategic plan requires robust government support to transition from planning to effective action. This support must extend beyond initial development funding to include a long-term investment, ensuring timely execution and efficient implementation of the actions identified in the strategic plan. With appropriate funding, the Northern Maternity Care Network (NMCN) could also effectively lead the operationalization of the plan.

We call upon the Ministry of Health to confront the alarming decline of labour and delivery services in rural Northern Ontario by funding the development of a region-specific strategic plan to sustain and enhance these vital services. This action is not just necessary - it is imperative for the health and well-being of pregnant persons living in the rural communities of Northern Ontario. Furthermore, we urge the Ministry to commit to providing the necessary resources and support for the operationalization of this strategic plan, ensuring its successful implementation and the long-term improvement of maternal and child health outcomes in Northern Ontario.

With the challenges facing rural labour and delivery programs clearly defined and preliminary solutions proposed, the responsibility now lies with the provincial government to ensure that pregnant individuals in rural Northern Ontario receive *the right care in the right place and have faster access to care.*

The realities of childbirth in the rural North: Sam's story

Sam has lived most of her life in Marathon, Ontario, a rural town of 3,300 nestled on the north shore of Lake Superior. When she found out she was pregnant in the fall of 2017, she was thrilled Marathon's small community hospital had the facilities and health-care providers to support her giving birth in her own community. *"Having other friends that have delivered here [in Marathon], they all had good experiences…. You weren't just another number."*

Apart from the one in Marathon, the nearest hospital offering labour and delivery services was a 3.5-hour drive away in Thunder Bay. With a due date in early March 2018, Sam felt relieved she wouldn't have to travel for her delivery: *"I liked the idea of it being comfortable and not having to travel on the highway in the winter."* Plus, the thought of giving birth at a larger centre didn't sit well with her: *"I was a little nervous with basically just being tossed on a bed, push the baby out, and kind of moved along."*

Sam couldn't help but be frustrated when, a week before her due date, she learned Marathon's labour and delivery services had to be temporarily suspended due to nursing shortages. *"I was devastated, obviously. It kind of threw a wrench into things for me and then I had to figure out like, 'Well, what am I supposed to do?'"*

Sam was caught in a difficult situation. Although her doctors strongly recommended that she travel to Thunder Bay to be closer to labour and delivery services, she was more than a week away from her due date and reluctant to make the trip too early. She wanted her partner, Cody, and mother to be there, and she didn't want to burden them with the uncertainty of taking potentially unnecessary time off work. *"Am I supposed to say, 'Hey Cody, take off X amount of days just in case I go into labour in a week or in a day'… and hope [my mum] doesn't have to book so much time off because she wanted to also be there?"*

Travelling to Thunder Bay also meant that she and Cody would have to cover the costs of a hotel until she went into labour. She explained, *"I do have my grandmother there…. I probably would have opted for a hotel just for comfort reasons… and to be closer to the hospital because she lives kind of on the outskirts."*

Any plans Sam had changed when she unexpectedly went into labour. With Cody just coming off a night shift, Sam's parents had to take on the task of driving her the 3.5 hours to Thunder Bay. She recounted: *"Ended up waking up in labour the next morning.... Cody just got off night shift, so he couldn't drive…. So, I ended up having to call my mom and dad. We then got in the vehicle, and I laboured for three hours in the car."*

The memory of that journey remains vivid for Sam. *"I couldn't think straight. I just knew I was in excruciating pain and we needed to go. The ride was super uncomfortable. Obviously, a safety risk as well. Like, I had to take my seatbelt off during every contraction because you want to reposition yourself and get comfortable…. I was more worried about giving birth in the car than anything and obviously not having anything to catch her, keep her warm."*

Sam's labour became so intense they were forced to make an emergency stop an hour from Thunder Bay and call for an ambulance to take her the rest of the way. Sam remembers, *"I really didn't enjoy the ambulance ride because then I was strapped to a stretcher. I couldn't move. I couldn't reposition…. So, I really couldn't wait for that ride to be over, and I felt like I was dying."*


Sam & Aleah

When Sam finally arrived in Thunder Bay, many details of her birth plan, which she had carefully discussed with her providers in Marathon, weren't known to the labour and delivery team in Thunder Bay. A significant point of contention was Sam's wish to pursue a medication-free birth. Reflecting on her experience, she noted feeling pressured by the hospital staff: "*She [the nurse] was very blunt with me, really pushy with the drugs after I was like, 'no… I'm fine,' like, 'just stop asking me,' is what I wanted to say.*"

A lack of interaction with the physician was particularly noticeable, especially when an offhand comment from a medical student led Sam to believe there may have been a complication during delivery. Reflecting on her experience, Sam considered how things might have been different had she been able to give birth in Marathon. She says, "*[I]n Marathon, that one-on-one, like one nurse with you the whole time, the doctors checking frequently, I think that I wouldn't have just been neglected or felt like I was neglected…. I think they would have been a little bit more courteous to keep me comfortable…. I feel like, in my mind, the doctors here are just a lot more attentive and it's just a more personal experience versus another baby delivered, move along.*"

Sam also recalls having to pay out of pocket for a private hospital room in Thunder Bay, noting that it was expensive but necessary to ensure Cody could stay with her and their new baby. She explains: "*So, we had to pay out of pocket to have a private room…. Cody stayed with me because otherwise, in a shared room, he wasn't allowed to stay.*" This was a lot different than she had anticipated. In Marathon, there was a private birthing suite available at no extra cost, which she had the opportunity to tour before giving birth, where family members could come and go as needed.

Despite all the differences from how Sam planned and envisioned her birth experience, she gave birth to a happy and healthy baby girl named Aleah.

When Sam contemplates where she would choose to give birth if she decides to have another child, she says, "*I would opt to stay here [in Marathon]. Especially now, having another child, because that would be so difficult having to find childcare…. I wouldn't want to have to bring my five-year-old to a hospital where I might not have a babysitter or somebody to watch her or [I] have to leave in the middle of the night.*"

When asked about whether rural labour and delivery services provide value to women, Sam is enthusiastic: "*Yeah 100%, especially for those who are low income, might not have a vehicle, who's to say? They can't get on a bus in the middle of the night to go deliver should they wake up in labour. I wish maybe there was the opportunity for our hospital to take on those more high-risk scenarios because…. I think it's super important that we are able to deliver here.*"

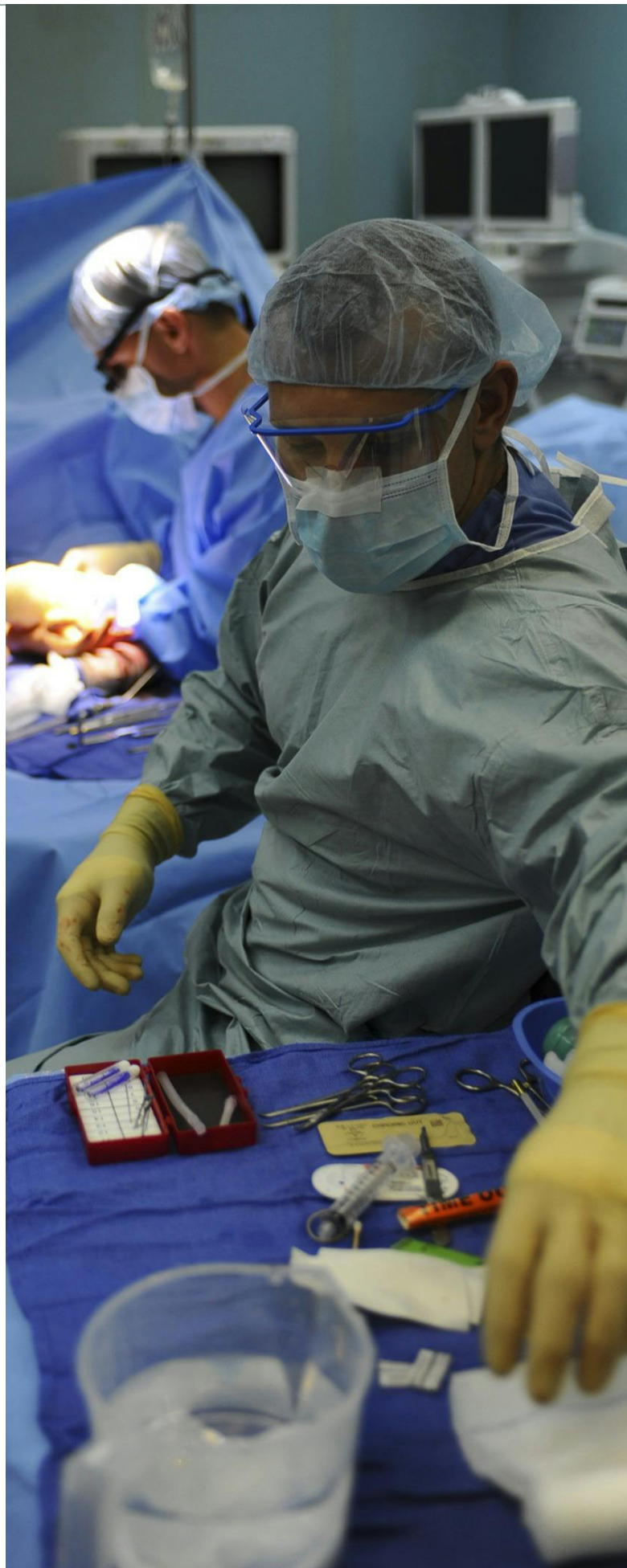
While Sam's experience is unique, it tells the increasingly common story of rural pregnant persons facing substantial challenges in accessing care.

1.0 The imperative to sustain rural labour and delivery services in Northern Ontario

Despite a declining rural population, the birth rate in rural Ontario remains significantly higher than in urban areas, with rural residents accounting for one in ten hospital births in the province.[1,2] This underscores the need for sustaining rural labour and delivery care. Maintaining these services extends beyond a matter of convenience; it is fundamental to providing equitable access to care for all Ontarians, regardless of location.

Sustaining these services are in direct alignment with the Ontario Ministry of Health's vision for the province's health system outlined in *Your Health: A Plan for Connected and Convenient Care*.[3] This plan aims to enhance the accessibility and availability of health services throughout the province. It upholds principles such as 'the right care in the right place,' ensuring health care is conveniently accessible within communities and brings essential services closer to residents. Another principle, 'faster access to care' aims to improve outcomes by providing quicker access to essential health-care services, in part by expanding hospital capacities, establishing new health-care facilities, and upgrading existing hospitals and community health centers. This vision recognizes the importance of accessible and timely health-care services in the lives of Ontarians. As such, efforts to sustain rural labour and delivery services should not merely be seen as a policy obligation, but an important step towards delivering on the promise of a more connected and convenient health-care system.

The persistent closure of rural labour and delivery programs and the shift toward service centralization run counter to the province's health-care objectives and deepen health inequities between urban and rural populations.[4,5] Addressing this issue first requires an understanding of the unique characteristics of the health-care system in the rural northern regions, including where and by whom care is provided. Recognizing these nuances is the first step in developing strategies that ensure equitable health-care across all communities and align with the province's health-care vision.



2.0 The importance of rural generalist physicians and surgical services in rural labour and delivery

Rural labour and delivery services often differ from those urban settings. Most often, care is provided by family physicians rather than specialists. In some communities, labour and delivery programs lack local cesarean section capabilities or, if available, are often provided by family physicians with advanced skill training. A more in-depth understanding of rural labour and delivery services is vital when considering how to implement change.

Family physicians are expected to graduate with competency in primary care, hospitalist care, emergency medicine, and obstetrics (prenatal, labour and delivery, and postnatal care). While the majority of family physicians practice in urban, office-based primary care, rural physicians often serve as generalists, providing care that extends beyond office-based primary care to include emergency, hospitalist, and labour and delivery services. These services are vital in rural areas where specialist physicians are scarce. In complex cases and high-risk pregnancies, collaboration with urban-based obstetricians is common, although care is often shared with local generalist physicians to minimize patient travel. The role of rural generalist physicians is therefore essential in providing labour and delivery care across the majority of rural Northern Ontario communities.

In rural Northern Ontario, only two communities currently provide labour and delivery services without local cesarean section capabilities. Research indicates delivery without cesarean section capabilities can be safe and effective if patients opting for local delivery are carefully evaluated and considered to have low-risk pregnancies.[6,8] However, the lack of cesarian access limits the number of pregnant people who can opt for local delivery. In contrast, rural communities with cesarean section services can accommodate a broader spectrum of pregnancies including those with higher risks, such as previous cesarean sections or poorly controlled gestational diabetes. While rural labour and delivery programs can operate without local cesarean capabilities, the loss of such surgical services often leads to programs closure.[7] Consequently, ensuring local cesarean section capabilities not only broadens the range of pregnant patients served but also enhances the resilience of rural labour and delivery programs.[7]

In rural Northern Ontario, many cesarean sections are carried out by rural generalist family physicians with surgical skills. These physicians will often also provide a suite of other surgical procedures, such as hernia repairs and appendectomies. Some larger rural communities have local general surgeons that also provide cesarean sections. Research has shown that when a rural hospital stops its program of local surgeries, it is also much more likely to stop providing cesarean sections and local labour and delivery services.[9] This supports the need to maintain both physician and nursing staff competence in providing surgeries and the hospital infrastructure, funding, and programs for general surgical services.

In present-day rural Northern Ontario, it is important to recognize the critical role of the rural generalist family physicians and the local surgical programs in maintaining the provision of rural labour and delivery services.

3.0 The decline of labour and delivery services in the North

Historically, nearly every hospital across Northern Ontario provided labour and delivery services. By 1999, only 20 such programs remained operational, and the trend of closures has persisted, with nine additional programs ceasing operations by 2020 and two more recently reported by the Northern Maternal Child Network (NMCN).[5,10] As of 2024, 74 per cent (26 out of 35) of community hospitals in the rural North no longer provide labour and delivery services. Even among the remaining sites, there has been a substantial reduction in both the scope and complexity of services offered, along with a decrease in the number of physicians providing labour and delivery care.[4] At present, only nine rural hospital sites supported by fewer than 35 rural generalist family physicians are available to provide labour and delivery services to approximately 50,000 rural Northern Ontarians of childbearing age.[4,11,12]

With the majority of labour and delivery program closures occurring at rural hospital sites, it is unsurprising that these permanent shutdowns have a disproportionate impact on rural communities. As a result, pregnant individuals in these areas are effectively left without local access to labour and delivery care. This has led to the emergence of a rural "maternity care desert" in the region, forcing rural pregnant persons to travel increasingly longer distances to access the care they need.[4] Studies quantifying the impact of service attrition have shown that pregnant persons living in rural Northern Ontario now face an average travel time of over 1.5 hours for basic labour and delivery services and more than 2.5 hours for specialized care, such as cesarean section services.[ibid] Nowhere else in Ontario is the lack of access more apparent than in the Northwest, where 57 per cent of pregnant persons must travel over two hours to reach a hospital that provides labour and delivery care.[1]

Data from 2021-22 shows that more than 1,200 pregnant persons in Northern Ontario had to travel for an hour or more to access a hospital offering labour and delivery care services (Table 1). This underscores the urgent need for strategic interventions to sustain labour and delivery services across the region. Without such measures, the accessibility and availability of these services are likely to deteriorate further, leading to even longer travel times for accessing care.

Table 1. Births and associated travel durations of one hour or more to labour and delivery centres in Northern Ontario (2021-22)

Travel Time to Hospital*						
	~1hr	>1-<hr2	>2-<3hr	>3-<4hr	>4hrs	Total
Number of Births**	289	347	245	125	207	1,213

*As estimated by straight-line distance.

** Estimated based on data provided by Better Outcomes Registry & Network (BORN).[13]

4.0 Consequences of closing rural labour and delivery services

The closure of rural labour and delivery services in Northern Ontario represents more than just an inconvenience; it constitutes a significant health risk and economic burden for pregnant persons and their families.

4.1 The impact of rural labour and delivery services closures on newborn health

The accessibility of labour and delivery care significantly influences newborn health. Studies have shown that longer travel times to access care are linked to increased risks of adverse birth outcomes, including stillbirth and preterm births.[14-16] Specifically, infants born to mothers who travel more than two hours for childbirth are at a higher risk of complications than those with shorter travel times.[16] Even for those whose travel time is between one and two hours, their infants often require significantly longer stays in the neonatal ICU (NICU) compared to those living closer to labour and delivery services.[16] Predictably, as travel time increases, so does the risk of complications. Infants born to mothers who travel more than four hours to reach labour and delivery care face a threefold higher likelihood of perinatal mortality and require longer stays in the neonatal NICU.[16]

In Northern Ontario, a lack of data on the relationship between travel duration for labour and delivery care and newborn health outcomes hinders a full assessment of the impact of service closure. Using provincial birthing data and distance-related health outcome metrics from other regions, we can estimate significant increases in risks for infants born to those who must travel for care compared to those living closer to a labour and delivery facility. These estimates include:

- 1.8-fold increase in likelihood of stillbirth.[17]
- 2.3-fold increase in the likelihood of premature birth.[17]

4.2 The impact of rural labour and delivery services closures on maternal health

The effect of access to labour and delivery care on maternal health remains largely underrepresented in research, yet growing evidence suggests that limited access has substantial negative impacts.[6,9,16,18-20] In particular, limited availability of appropriate clinical care has been identified as a key factor contributing to increased risk of maternal morbidity.[9,21] In fact, those residing in rural areas, experience up to a twofold increase in the risk of life-threatening conditions, such as eclampsia, amniotic embolism, and uterine dehiscence or rupture, compared to their urban counterparts.[21]

Availability of local labour and delivery care also significantly affects maternal mental health and well-being.[18] The necessity for pregnant persons to travel outside their communities for childbirth leads to substantial psychological distress, primarily from delivering in an unfamiliar environment away from social support networks. This situation can elevate stress levels and foster a sense of isolation.[6,18] Studies show that those who have to travel more than one hour to access labour and delivery services are more than seven times likely to suffer from stress and anxiety related to childbirth compared to those with local services.[16,18] Particularly worrisome is the growing body of evidence suggesting that prenatal maternal stress and anxiety not only negatively affect maternal health, but also can adversely impact fetal health as well.[16,18]

4.3 The impact of rural labour and delivery services closures on Indigenous populations

The enduing effects of colonialism continue to have a profound impact on the health and well-being of Indigenous populations across what is now recognized as Canada.[11,22,23] Discriminatory colonial policies that saw the suppression of Indigenous cultural practices, forced relocation, and unjust appropriation of Indigenous land have had lasting repercussions.[22,23] These injustices have created systemic inequities within the health-care system, manifesting as both physical and cultural barriers to access for Indigenous populations. These include significant distances from health-care facilities and pervasive issues of cultural insensitivity, prejudice, and discrimination within the health-care system itself.[23-26] Together, these factors create a health-care environment that is not culturally safe and undermines the health and well-being of Indigenous Peoples, further perpetuating longstanding inequalities in health-care access and health outcomes. With Indigenous Peoples being the fastest growing demographic in Northern Ontario, there is an urgent need to improve access to and cultural safety of labour and delivery services.[24,27] Without prompt and effective action, these disparities will likely worsen, reinforcing systemic barriers that will further compromise the health and well-being of Indigenous communities.[24]

A major challenge in Northern Ontario is the limited availability of basic health-care services in areas with predominantly Indigenous populations. It is a situation made worse by historical relocations of Indigenous Peoples by the Canadian government, which have placed these communities in some of the province's most isolated and remote regions of the province.[24,25,28] As a result, residents must travel significantly farther to access to health care compared to their non-Indigenous counterparts, particularly for specialized services such as labour and delivery care. [24,28] These accessibility challenges are believed to contribute significantly to the disparities in infant mortality rates, evidenced by rural areas with higher Indigenous populations experiencing rates that are 1.9 to 3.9 times higher than those in areas with lower Indigenous populations.[29]

The Truth and Reconciliation Commission's (TRC) Calls to Action #18-#24 lay an important foundation for developing policies, plans, and practices aimed at closing the gaps in health-care access and quality for Indigenous Peoples.[30] Call to Action #19 is especially relevant in the effort to maintain rural health services. It calls for the federal government, in consultation with Indigenous peoples, to establish measurable goals to identify and close the health outcome gaps between Indigenous and non- Indigenous communities.

TRUTH AND RECONCILIATION COMMISSION

Call to Action #19

"We call upon the federal government, in consultation with Aboriginal peoples, to establish measurable goals to identify and close the gaps in health outcomes between Aboriginal and non-Aboriginal communities, and to publish annual progress reports and assess long term trends. Such efforts would focus on indicators such as: infant mortality, maternal health, suicide, mental health, addictions, life expectancy, birth rates, infant and child health issues, chronic diseases, illness and injury incidence, and the availability of appropriate health services."

This includes a specific focus on maternal and fetal health outcomes and the provision of appropriate care as key measures of progress. This includes a particular emphasis on improving maternal and fetal health outcomes and the provision of appropriate care as key measures of progress.

Ultimately, rural Indigenous Peoples in Northern Ontario may decide to reclaim labour and delivery services in their communities, perhaps similar to how the James Bay Cree in Quebec successfully reintegrated birthing practices in their community many years ago.[31] As the journey toward autonomy and self-determination continues, it is essential to support and sustain the existing labour and delivery services in rural Northern Ontario. These services are crucial as they provide essential care closer to the homes and communities of Indigenous Peoples, helping to reduce the health and social risks associated with long-distance travel for care.[6,25,28] These local services also act as an important bridge to health-care that is not only more geographically accessible, but also more often attuned with the social and cultural needs of the communities they serve. In this way, they can play an important role in coordinating access to necessary support programs for those in need, enhancing the overall well-being of the community.[28]

In Call to Action #18, the Truth and Reconciliation Commission calls for the need to acknowledge the detrimental impacts of past government policies the health of Indigenous Peoples and their rights to health care.

TRUTH AND RECONCILIATION COMMISSION

Call to Action #18

"We call upon the federal, provincial, territorial, and Aboriginal governments to acknowledge that the current state of Aboriginal health in Canada is a direct result of previous Canadian government policies, including residential schools, and to recognize and implement the health-care rights of Aboriginal people as identified in international law, constitutional law, and under the Treaties."

Shelley Livingston, Manager of Health Services for the Indigenous community of Netmizaagamig Nishnaabeg, discusses the ongoing issues related to unsafe care, particularly in labour and delivery care for Indigenous Peoples and their families. She notes, "*Obstetrics is one spot in particular where I know a lot of harm has happened and there is lots of potential for it. …There's a legacy around forced sterilization…. And then we can go into a little bit more around the child welfare system …. The type of care a woman receives around what's happening with her body as she's growing a human life and then what happens after. It's the elephant in the room about whether or not we're able to care for our children or do we have to involve family services.*" Indigenous Peoples have the right to receive safe, culturally appropriate care. Livingston adds that when pregnant people from her community must travel significant distances, they frequently meet health providers who are not familiar with them or their community and do not fully understand their needs. In contrast, when these individuals receive care within nearby rural communities, there is a deeper appreciation for them as individuals and a greater understanding of their specific needs and challenges. This proximity allows for safer, higher quality care.

It is imperative to establish care pathways that respect the autonomy and traditions of Indigenous Peoples and incorporate their perspectives into health service delivery. Any strategies addressing the attrition of labour and delivery services in rural Northern Ontario must also directly address the unique disparities in care faced by Indigenous populations. This involves acknowledging these disparities and actively working to eliminate them. Central to this approach is the inclusion of Indigenous partners ranging from knowledge keepers and community elders to Indigenous health care leaders. It is important that these voices are integrated in all phases of planning, implementation, and evaluation of labour and delivery services improvement. This engagement ensures that the cultural, historical, and social realities of Indigenous populations in the rural North are reflected in health care solutions. This approach not only ensures solutions are more holistic and culturally relevant but also creates an inclusive and equitable health-care environment.

In rural Northern Ontario, several smaller-scale initiatives have been implemented to address the challenges of delivering culturally safe and responsive labour and delivery care closer to home. For example, Waasegiizhig Nanaandawe'iyewigamig in the Kenora area offers primary health care and preventative services combining traditional and contemporary approaches to health and healing, including essential prenatal and postnatal care delivered by midwives.[32] This allows Indigenous pregnant people in this area to access basic health-care services that are culturally relevant and locally available. Similarly, in the remote region of Attawapiskat First Nation, the Neepeeshowan Midwives practice delivers comprehensive perinatal care and local labour and delivery services to community members. Yet, whether by choice or due to medical necessity, nearly 75 per cent of the 50 to 60 births that occur annually take place outside of the community.[33] With the closest labour and delivery centre being 500 km away in Timmins and only accessible by air, significant logistical and financial challenges arise for those who need or choose to deliver outside their community. Practices like Neepeeshowan Midwives and Waasegiizhig Nanaandawe'iyewigamig demonstrate how health-care services can be tailored to meet the unique needs of Indigenous communities. Examples such as these may offer guiding principles for developing and implementing health-care services that are equitable, accessible, and culturally attuned. While these services are invaluable, their capabilities are naturally limited in managing high-risk pregnancies or complications that require specialized medical intervention. This gap in service underscores the broader issue of health-care equity and highlights the need for comprehensive health-care infrastructure improvements in Indigenous areas.

In line with the need for reconciliation with Indigenous communities, sustaining local labour and delivery care can help bridge the gap as these communities strive for more self-reliant and culturally safe health-care systems. However, measures to sustain these services require a holistic and concerted approach that acknowledges historical contexts, respects Indigenous cultures and rights, and aims to dismantle systemic biases and barriers within the health-care system.

4.4 The cost of rural labour and delivery services closures

Assessing the economic impact of the closure of rural labour and delivery services on both individuals and Ontario's health-care system is complicated by the lack of regional data. This limits the ability to accurately estimate the costs borne by individuals who must travel increasingly greater distances for care, as well as the financial strain placed on Ontario's health-care system, which must manage high-acuity cases and the poorer fetal and maternal health outcomes associated with travelling for care. Without detailed regional information on distances to delivery centers, personal out-of-pocket expenses, rates of birthing complications, emergency medical transfers, health outcomes for pregnant individuals and their infants, we must rely on health-care economics studies from other provinces to gain an initial insight into the economic impact of closing rural labour and delivery services.

Information on the medical travel expenses incurred by rural residents of Northern Ontario is limited. Studies from British Columbia, however, indicate that rural residents there face average out-of-pocket expenses exceeding $1,000 for transportation, accommodation, and lost income associated with medical travel.[34] For pregnant persons, these travel costs quickly add up, especially considering the up to 11 recommended health-care visits during pregnancy.[35] While telemedicine has improved access to care, it does not replace the in-person visits that are required for thorough prenatal assessments and management of higher-risk pregnancies.[36,37] As a result, those lacking access to local prenatal or labour and delivery care face a substantial financial burden in following the recommendations for health-care visits, increasing the risk of complications that could otherwise be prevented or mitigated through regular care.

Even individuals who receive most of their prenatal care via telemedicine, as well as those without local labour and delivery services or those who choose to give birth in urban centers, are advised to remain close to a health-care facility with labour and delivery services as their due date nears.38 The duration of stay advised varies based on maternal and fetal health but can often extend beyond two weeks prior to the expected date of delivery.[6,18] Unlike cancer care services and charities, like the Ronald McDonald House, which provide low or no-cost housing for families living far from treatment centers,[39] Ontario lacks a comparable program for pregnant individuals who are medically advised to stay close to labour and delivery care services.[16,40] This lack of affordable accommodation, coupled with the other expenses associated with medical travel, makes adhering to medical recommendations financially challenging. It places many pregnant people in a distressing situation where they must weight their financial stability against the well-being of themselves and their unborn child.[6,16]

Using average out-of-pocket cost estimates, we can begin to approximate the financial burden faced by pregnant persons travelling for medical care in rural Northern Ontario.[34] Every year, approximately 1,200 residents of Northern Ontario must travel for labour and delivery care, either by choice or necessity. Based on these figures, the annual financial impact on these rural residents is estimated at up to $5.7 million (Appendix 3). However, this estimate likely underrepresents the true costs, as it does not include additional expenses such as those for travel companions (e.g., spouse, partner, or family members) or other incidental costs like childcare, pet care, and house-sitting.

The closure of rural labour and delivery services carries significant financial consequences beyond just travel and lodging. The health system itself incurs considerable costs due to heightened complications and poorer maternal and newborn health outcomes that are linked to extended travel times needed to access care.[16] As discussed, quantifying the total cost that closures have on the provincial health system is challenging due to the absence of specific regional data. Using data on the additional NICU bed days needed for infants born to rural residents, we estimate the annual cost for NICU care alone at approximately $417,000 (Appendix 4). However, this is merely a fraction of the overall financial impact, excluding broader health-care services and long-term costs associated with poor prenatal and postnatal care.[41,42] When considering the full range of direct and indirect costs, the total financial burden on the provincial health system is expected to be significantly higher, underscoring the need for targeted policy interventions to mitigate these impacts.

5.0 Causes of closure: A comparative analysis

Key factors contributing to the closure of rural labour and delivery services were identified through interviews with doctors, nurses, and administrators from nine rural hospitals in Northern Ontario where these services had been discontinued.

Analysis of these discussions highlighted three primary challenges that are undermining the sustainability of rural labour and delivery programs in rural Northern Ontario:

1. **Inadequate education & training:** Current undergraduate medical and nursing programs do not adequately prepare family doctors and nurses with the skills and competencies necessary for providing rural labour and delivery care. For those already practicing, there is a lack of accessible continuing medical education (CME) opportunities tailored to rural health settings and designed to meet their current needs. This gap, combined with low delivery volumes, diminishes health-care providers' confidence in their skills.

2. **Lack of health human resources:** Rural hospitals are facing a critical shortage of nurses and physicians, particularly those trained in labour and delivery, which significantly impacts their ability to provide this care service.

3. **Insufficient collaborative support infrastructure:** The lack of collaborative, cross-sector partnerships among government entities, educational institutions, tertiary care centers, rural hospitals, and health-care providers and patient impedes the development of a unified vision for labour and delivery services in the rural North. The absence of a cohesive plan results in inadequate policies, programs, and infrastructure to effectively support and sustain these care services.

After identifying the key factors leading to the closure of labour and delivery services in Northern Ontario, we turned our attention to Australia and British Columbia. These regions have faced similar challenges with potential widespread closures of rural labour and delivery services but have successfully implemented strategies to prevent these shutdowns. Insights gathered from interviews with health-care administrators, educators, government officials, and labour and delivery care providers in these areas provided valuable perspectives on measures implemented at institutional, local, regional, and national levels that were perceived as effective in strengthening sustainability of rural labour and delivery services.

6.0 Recommendations for sustaining rural labour and delivery services in Northern Ontario

Based on insights from those involved in managing and providing labour and delivery services across Northern Ontario, Australia, and British Columbia, we have developed an action plan. This plan includes six evidence-informed recommendations aimed at addressing the three primary challenges that are threatening the sustainability of rural labour and delivery programs.

Action	Recommendations	Solutions	Outcome
#1 Improve labour and delivery education and training Support rural health-care teams in establishing, sustaining, and improving their knowledge and skills in labour and delivery care.	**Recommendation 1.1** Enhance comprehensive labour and delivery education for medical learners.	Develop educational pathways and mentorship programs for labour and delivery care that include experiential learning and training opportunities.	• Produce medical graduates who have experience providing labour and delivery care. • Produce family physicians who have competence and confidence providing rural labour and delivery care.
	Recommendation 1.2 Provide funding for continuing medical education, training, and upskilling in labour and delivery for rural health-care providers.	Consistent allocation of provincial government funding dedicated to: i) Providing training and educational programs for rural labour and delivery care providers to ensure they maintain their skills and competence. ii) Providing support for rural health-care providers seeking additional labour and delivery skills training (e.g., C-section surgical skills). iii) Improving availability of rural-specific labour and delivery continuing medical education.	• High-quality, available, and accessible training opportunities for rural labour and delivery teams. • Long-term strategy for meeting the continuing medical education needs for rural labour and delivery providers and their teams. • Health-care personnel have access to sufficient training and support to improve skills and knowledge to maintain and enhance labour and delivery care competence. • Health teams can and do integrate new evidence-informed practices into their labour and delivery care. • Facilitate the provision of exceptional care to pregnant persons and their newborns.

#2 Increase health human resources
 	
Increase the number of rural health-care professionals who provide labour and delivery care.
	Recommendation 2.1
	Recruit health-care professionals skilled in labour and delivery care to rural regions.
		Implement evidence-based, region-specific recruitment strategies aimed at recruiting health-care personnel with labour and delivery skills.	• Promote care that provides optimal maternal and fetal outcomes.
			• More health-care professionals providing labour and delivery care in rural areas, meaning:
			  • No unanticipated program closures.
			  • All pregnant persons can plan delivery in these areas in cases where it is appropriate, and they desire to do so.
			  • Improved access to rural surgical labour and delivery care and services.
			• Sustained access to local labour and delivery care.
			• Maintain labour and delivery care services that can meet the needs of the community.

	Recommendation 2.2 Develop initiatives to support and retain rural health-care professionals offering labour and delivery care.	Develop a retention strategy for current rural health-care personnel with labour and delivery skills.	
#3 Build support Develop and strengthen partnerships, policies, and programs to support rural labour and delivery services.	**Recommendation 3.1** Establish cross-sector partnerships to support rural labour and delivery care.	Establish an organization to implement, manage, and evaluate the changes needed to improve the sustainability of rural labour and delivery care in Northern Ontario. Develop a strategic plan that: ii) Establishes a unified vision for the future of rural labour and delivery services in Northern Ontario. iii) Identifies strategic priorities.	• Collaboration among partners to establish pathways for labour and delivery care close to home. • Collective perspective on rural labour and delivery care that informs planning on an annual cycle. • Commitment to and an enhancement of collaboration among labour and delivery partners. • Shared recognition of the rural labour and delivery care desert. • Partners understand their role in maintaining and sustaining rural labour and delivery care.
	Recommendation 3.2 Develop targeted infrastructure, policies, and programs to support rural labour and delivery.	Establishing collaborative cross-sector working groups to develop targeted infrastructure, policies, and programs to support rural labour and delivery care.	• Improved access to and quality of labour and delivery care in rural communities. • Rural hospitals offering labour and delivery care are better connected in labour and delivery health networks. • Improved regional supports for rural labour and delivery programs.

Action 1: Improve labour and delivery education & training

Aim: *Support rural health-care teams in establishing, sustaining, and improving their knowledge and skills in labour and delivery care*

The limited availability of labour and delivery training opportunities during medical school, especially in rural settings, often results in graduates feeling less competent and confident in providing this care. This issue is compounded by the challenges in accessing CME, training, and skills development in labour and delivery care, which pose substantial barriers for rural health-care providers seeking to maintain and improve their proficiency. This has led to a shortage of providers capable of offering rural labour and delivery care, hindering the sustainability and growth of these services in rural areas. This highlights the need for improved educational programs in labour and delivery care for medical learners alongside the development of more accessible, affordable, and rural-specific training opportunities for current rural health-care providers. To address these challenges, the following recommendations are proposed:

Recommendation 1.1: Enhance comprehensive labour and delivery education for medical learners

Improving labour and delivery education for medical learners involves integrating competency-based training opportunities and experiential learning tailored to the realities of providing this type of health service. This may require the review and modification of the current medical curriculum to include more or longer clinical rotations in labour and delivery; promoting interdisciplinary training for labour and delivery teams; integrating simulation and practical skills training; and encouraging learner participation in obstetrics research.

Given the significant impact mentors can have on medical learners, it is important that UME and resident programs invest in creating mentorship programs for medical students and residents with an interest in labour and delivery care. By connecting learners with mentors who have firsthand experience in providing labour and delivery care in various rural settings, education programs can ensure a comprehensive and supportive education in labour and delivery.

Together, these initiatives to enhance comprehensive labour and delivery education represent a investment in the future of health-care. By equipping future health-care professionals with essential knowledge, skills, confidence, and practical experience, we can ensure the provision of high-quality care. This investment is critical for the sustainability of rural labour and delivery services, guaranteeing a pool of skilled health care providers that can meet the needs of rural and remote communities.

Recommendation 1.2: Provide funding for continuing medical education, training, and upskilling in labour and delivery for rural health-care providers

Providing financial support for CME, training, and upskilling in labour and delivery care will help lower the barriers rural healthcare providers face in enhancing their skills and integrating these services into their practice. This support would encourage rural providers to develop, maintain, and enhance their expertise, thereby increasing their competence and confidence in labour and delivery care. It is also important to address the specific challenges rural providers face when pursuing CME and training, such as travel expenses, course registration fees, and securing locum coverage to attend training programs outside their communities. Financial support could alleviate these logistical and financial hurdles, enabling more rural healthcare providers to access medical training and development opportunities. Additionally, incentives for participating in labour and delivery training programs should be considered to help address the shortage of rural providers offering this level of care. For instance, a now-discontinued program in Northern Ontario provided financial subsidies to rural physicians for CME. Reviving such programs or introducing similar initiatives could motivate more rural physicians to pursue and complete labour and delivery training courses.

Currently, there is a significant shortage of CME and upskilling programs specifically tailored for rural health-care providers. To bridge these training gaps, it's essential to develop opportunities that meet the distinct needs of rural health-care settings and are accessible to rural providers. A strategic step toward this goal is to fund partnerships between rural hospitals, tertiary care centres, academic institutions, and professional organizations (e.g., SOGC, SRPC). These partnerships can leverage the strengths and resources of each organization to develop comprehensive training programs that are both practical and relevant to the needs of rural healthcare providers.

An example of successful collaboration that has fostered the creation of training programs is in British Columbia. Here, cooperation among tertiary hospitals, universities, and rural hospitals has led to an educational program specifically tailored for rural physicians. This program focuses on enhancing their critical care skills in labour and delivery, equipping them to handle childbirth emergencies more effectively. This strategic partnership not only strengthens the capabilities of rural healthcare providers but also ensures that they are well-prepared with the necessary skills to provide high-quality care in their rural communities.

A commitment to long-term, sustainable funding for improving education and training opportunities in labour and delivery care, as well as fostering development and growth of robust collaborations among partners in such care, is imperative. Such a commitment is essential for building a more equitable rural health-care system, ensuring that all providers have the necessary resources, support, and education to deliver quality care.

Action 2: Increase health human resources

Aim: *Increase the number of rural health-care professionals who provide labour and delivery care*

Rural communities in Northern Ontario face a shortage of healthcare professionals skilled in providing labour and delivery care. This not only limits access to care for rural residents but also places a significant strain on the existing workforce, threatening the long-term sustainability of remaining services. To address this issue, the following recommendations are proposed to strengthen the labour and delivery workforce in rural Northern Ontario:

Recommendation 2.1: Recruit health-care professionals skilled in labour and delivery care to rural regions

Recruiting health-care workers proficient in labour and delivery care is essential for establishing sustainable and resilient labour and delivery care programs in the underserved rural communities of Northern Ontario.

To improve recruitment, we need to implement evidence-based, region-specific strategies designed to attract health-care professionals skilled in labour and delivery. These strategies should include targeted outreach initiatives, competitive compensation packages, and fostering a workplace culture that promotes a healthy work-life balance. For example, Ontario's provincial government has recently adjusted funding for doctors in 38 rural communities. Communities with active labour and delivery programs now receive funding for an additional 0.5 full-time equivalent physician to help manage these services. While this represents progress, this measure falls short of fully addressing the health human resource issues in this service. More comprehensive measures are needed to address ongoing health-care workforce challenges effectively. For instance, recruiting midwives through the development of alternative practice models in smaller communities could significantly enhance the sustainability of these services.

Additionally, broader upstream interventions such as adjusting medical school admission criteria to favour candidates likely to practice in rural settings and offering specialized training for these environments could expand the pool of health-care providers willing to work in rural areas. The Northern Ontario School of Medicine (NOSM) University's Rural Generalist Pathway, which trains students specifically to work in rural Northern settings, is a prime example of such an initiative. Proper funding and support for this pathway could greatly strengthen the rural health-care workforce.

Ultimately, it is essential to prioritize the recruitment of health-care providers, especially those with expertise in rural labour and delivery, to enhance the resources available for providing care in these communities.

Recommendation 2.2: Develop initiatives to support and retain rural health-care professionals offering labour and delivery care

Addressing health-care staffing shortages, particularly in labour and delivery care, requires the development and implementation of targeted retention strategies that are evidence-based, responsive to the needs of health-care professionals, and region specific. These strategies should aim to create a supportive work environment that increases job satisfaction and makes health-care providers feel valued for their crucial contributions to labour and delivery care. Strategies should include initiatives to promote a healthy work-life balance among current providers. This can be achieved by recruiting additional practitioners and support personnel to help distribute workloads more evenly among staff, which would allow health-care providers to manage their schedules and workloads more effectively and reduce the risk of burnout.

It is also necessary to reevaluate and update the compensation models for labour and delivery care, especially in rural and remote regions, to ensure that compensation accurately reflects the skills and expertise required to deliver care with limited resources. Adjustments to compensation might include considerations for the cost of living, travel allowances, and stipends for continuing medical education, training, or upskilling.

Ultimately, retaining a dedicated workforce committed to delivering labour and delivery care in rural areas is vital. This commitment is essential to maintain the availability of these services in Northern Ontario and to prevent the further decline of these critical services in the region.

Action 3: Build support

Aim: *Develop and strengthen partnerships, policies, and programs to support rural labour and delivery services*

To sustain and enhance rural labour and delivery services, forming strategic partnerships among rural and urban health-care centres, provincial government entities, and educational institutions are critically important. These collaborations can help establish new clinical networks, strengthen existing connections, foster education and professional development, enhance knowledge-sharing, and support the growth of innovative ideas. Developing responsive policies and programs tailored to the unique realities of rural labour and delivery is also essential. The following recommendations aim to develop and strengthen these supports:

Recommendation 3.1: Establish cross-sector partnerships to support rural labour and delivery care

To ensure effective action, it is critical that efforts to sustain rural labour and delivery services in Northern Ontario be guided by a clear and comprehensive vision. The current lack of such a vision underscores the immediate need for its development. This vision should be spearheaded by a lead organization, which will play a pivotal role in coordinating the process and ensuring the inclusion of diverse perspectives. Contributions from provincial government officials, universities, tertiary care centers, rural institutions, care providers, Indigenous communities, and patients are essential to create a vision that truly reflects the varied insights, ideas, and lived experiences of all key partners. Once the vision is collaboratively formulated and consensus is reached, all stakeholders can move forward with confidence, equipped with a clear strategic direction and goals that will guide the development and implementation of a comprehensive strategic plan.

Establishing a shared vision will provide the foundation for a strategic plan to sustain and enhance the provision of rural labour and delivery services in Northern Ontario. The same partners will then inform and ultimately define the strategic priorities. Having worked together to develop the strategic plan, the partners involved will have had the opportunity and experience to develop relationships that can facilitate collaboration as the plan moves to implementation. Creation of intentional and formal collaborations involving the provincial government, universities, tertiary care centres, rural institutions, care providers, Indigenous communities, and patients will pool resources, knowledge, and expertise, driving innovation that will better sustain existing labour and delivery services. Moreover, the combined expertise of these groups will help identify new and emerging priorities. For instance, it is presently very difficult for a physician in Northern Ontario to enhance their labour and delivery skill set, such as upskilling to provide C-section services for their community. Other constituencies have developed collaborations between government, universities, tertiary hospital centres, and rural communities to support physicians in having a clear, facilitated path to develop these skills. Australia has developed such a collaboration to support a pathway with a known application process, education plan, resources, mentorship, and evaluation structure. It also provides ongoing salary support for rural physicians to undertake this upskilling, while providing locum tenens support to service their community.

Establishing a lead organization to champion partnerships and bring all invested parties to the table will be essential to the process for maintaining access to care for pregnant people. Cross-sectoral partnerships will help define a shared vision, develop strategic priorities, and ultimately create positive change to ensure the sustainability of labour and delivery services in rural Northern Ontario.

Recommendation 3.2: Develop targeted infrastructure, policies, and programs to support rural labour and delivery in Northern Ontario

To improve the quality and accessibility of labour and delivery services in rural Northern Ontario, it is essential to develop targeted infrastructure, policies, and programs specifically designed for these communities. Establishing collaborative cross-sector working groups is an effective strategy for achieving this. These groups, consisting of relevant partners, will collaborate to design and

implement solutions to directly address the challenges associated with providing rural labour and delivery care. By fostering a unified effort among key partners, these initiatives will help ensure the sustainability of labour and delivery services in the region.

The effectiveness of targeted interventions is already demonstrated by the successful implementation of real-time virtual support systems for rural emergency care in Northern Ontario. This service allows rural physicians to immediately consult with specialists via phone or video so they can provide essential support for managing critically ill patients. A similar model has been effectively employed in British Columbia to aid rural labour and delivery care providers, offering a viable model for adaptation in Northern Ontario. Collaborations between government entities and urban hospitals could facilitate the adoption of this model, thereby enhancing the quality and accessibility of rural labour and delivery services. Furthermore, initiatives in British Columbia that have improved emergency land transport for rural labour and delivery by increasing the geographic density of available rural transfer teams exemplify how targeted policy changes can significantly enhance the accessibility and responsiveness of health-care services in rural areas. Implementing similar measures in Northern Ontario could address the unique logistical challenges faced by healthcare providers and patients in these remote communities, potentially leading to improved health outcomes and increased safety.

The development of innovative infrastructure, policies, and programs is essential for strengthening rural labour and delivery care. Engaging a diverse group of relevant partners is crucial to harness their unique perspectives and ideas, which will only help to enhance the quality, accessibility, and safety of labour and delivery services in rural Northern Ontario.

7.0 A strategic plan for sustaining rural labour and delivery care in Northern Ontario

7.1 The importance of developing a strategic plan

The lack of a unified vision for rural labour and delivery care in Northern Ontario hinders the coordination of organizations and resources necessary to sustain and support the few services that remain operational. Having identified the key factors behind closure of Northern Ontario's rural labour and delivery programs, along with potential interventions that may help sustain service based on lessons from BC and Australia, provides valuable insights for developing of a strategic plan to sustain these services.

A formalized strategic plan can provide a clear direction and framework to improve the quality, sustainability, and accessibility of rural labour and delivery services. The success of this plan is contingent on identifying and engaging all relevant partners to achieve a comprehensive understanding of the current landscape. This collaboration helps pinpoint existing gaps and ongoing challenges faced in sustaining this health service, many of which are highlighted in this document, ensuring that the strategic plan's initiatives are practical and informed by diverse perspectives.

7.2 Guiding the development of strategic plan

The creation of a strategic plan to sustain rural labour and delivery services in rural Northern Ontario requires the leadership of a dedicated organization capable of guiding and managing its development. In regions like Australia and British Columbia, established organizations have successfully bolstered the sustainability of rural labour and delivery services. For example, the Royal Australian and New Zealand College of Obstetricians and Gynecologists (RANZCOG) has been instrumental in advocating for rural labour and delivery services, addressing service inequities, and initiating training and educational programs that strengthen to rural and remote workforce.[43] Similarly, the Rural Coordination Centre of BC (RCCbc), while championing rural health more broadly, has also made significant advancements in improving both access to and the quality of rural labour and delivery care in the province.[44]

However, Ontario currently lacks an organization dedicated to championing rural health issues, including advocating for the sustainability of rural labour and delivery services. Given the growing inequities in access to this care, waiting for such an organization to be established risks exacerbating these issues. Therefore, it is imperative for the Ministry of Health to prioritize appointing an organization to lead the development of a regional strategic plan aimed at sustaining and enhancing rural labour and delivery services in Northern Ontario. Such an organization must be committed to uniting stakeholders from healthcare, government, and community sectors, providing strong leadership that fosters collaboration and trust. Importantly, this entity must also have a comprehensive understanding of the specific health-care challenges faced by rural Northern Ontario, including geographical barriers, limited resources, and workforce shortages. Such insight will ensure that the strategic plan is both adaptable and sustainable, effectively addressing current health-care needs while also anticipating future challenges and opportunities in the region. Through setting clear and achievable objectives, this organization will help define strategies, initiatives and directions to support the accessibility, quality, and long-term sustainability of labour and delivery services in rural Northern communities.

One organization that stands out as suitable for this role is The Northern Maternity Care Network (NMCN). Founded in 2021 to enhance health outcomes for maternal and child populations in Northern Ontario, NMCN is ideally equipped to lead initiatives aimed at sustaining rural labour and delivery services. This role aligns seamlessly with NMCN's primary mission, making them a natural leader in developing a strategic plan to support the sustainability of rural labour and delivery care.

Capitalizing on NMCN's expertise and resources would significantly strengthen the support and coordination needed to improve the sustainability of these services. Their comprehensive understanding of the health-care challenges in Northern Ontario positions them well to lead the strategic planning process, ensuring that the plan is both responsive to and feasible within the complexities of rural health-care delivery. Further, NMCN's proactive efforts in identifying service gaps, addressing the challenges faced by underserved populations, implementing best practices, and promoting continuous

quality improvement enable them to develop targeted initiatives that specifically address the labour and delivery needs of rural Northern Ontario.

NMCN's accountability to the Ministry of Health and Ontario Health North, together with its solid relationships with the Provincial Council for Maternal and Child Health and the Better Outcomes Registry Network (BORN), offers a strategic advantage. These connections ensure that the strategic plan's development is not only closely aligned with broader provincial health initiatives but also informed by the latest regional data in obstetric care. Furthermore, NMCN's mandate to utilize data for benchmarking, priority setting, and quality improvement provides them with the necessary tools to continuously monitor and refine the strategic plan. This adaptability allows the plan to evolve in response to changing conditions and sustain long-term enhancements in healthcare outcomes for communities throughout Northern Ontario. By promoting collaboration among various healthcare providers and aligning their efforts with broader provincial health strategies, NMCN fosters a cohesive and effective network that significantly propels forward maternal and child health in the region.

By leveraging the Northern Maternity Care Network's expertise and resources, the strategic plan can achieve a higher level of coherence and effectiveness. Their involvement ensures that the plan is grounded in practical, on-the-ground realities and that it benefits from the latest advancements in maternity care. Ultimately, their participation could make the difference between a strategic plan that merely outlines goals and one that delivers tangible improvements in the sustainability and quality of rural obstetrical services.

The strategic plan must be supported by the provincial government to ensure successful operationalization. This support must extend beyond initial development funding to include long-term investments, ensuring timely execution and efficient implementation of the actions identified in the strategic plan. A commitment from the government is essential to ensure the plan's success and the sustained improvement of maternal and child health outcomes in rural Northern Ontario.

7.3 Key partners in strategic plan development

Although a lead organization is crucial for coordinating the development of a strategic plan to sustain rural labour and delivery care in Northern Ontario, successful implementation will undoubtedly depend on collaboration among a diverse group of key partners. Their collective input and perspectives are vital for a strategic plan that is comprehensive, culturally sensitive, and responsive to the unique challenges faced by these communities. Engaging key partners not only enriches the plan with varied insights but also fosters shared ownership, significantly enhancing the likelihood of effective implementation. Key partners to consider in the development of the strategic plan should include:

Government:

Provincial government agencies (e.g., Ministry of Health, Ontario Health)

These agencies play a pivotal role in policy development and health-care funding, ensuring that the health-care system meets the specific needs of rural communities.

- As the primary funder of health services, the government strategically uses its funding power to promote, develop, and grow programs that enhance labour and delivery care. This could involve supporting rural labour and delivery training, fostering collaborations between health-care entities, and providing financial incentives for health-care providers to integrate this level of care into their professional scope. Targeted funding also motivates professionals to serve in rural areas, tackling staffing shortages.
- Through policymaking, the government sets high standards for maternal and newborn health services, ensuring care quality and safety while addressing the challenges of rural health care. Policy initiatives can also focus on enhancing the workforce, thus ensuring rural areas have sufficient, well-trained labour and delivery care providers.

In the context of strategic planning, the involvement of provincial government agencies is crucial. They ensure that the strategic plans are well-funded, align with high standards of care, and include measures to enhance the healthcare workforce. Their role as a key partner is vital to formulating a comprehensive strategy that effectively addresses the ongoing needs and challenges of delivering quality labour and delivery care in rural settings.

Local/rural government

Local governments are crucial in ensuring the sustainability of labour and delivery care in rural and underserved areas. They play a central role in recruiting and retaining health-care professionals through incentives. Advocacy for supportive policies, investment in infrastructure, and transportation solutions further ensure that pregnant persons have access to necessary care. These strategic actions by local governments significantly contribute to the availability and accessibility of labour and delivery services, safeguarding the health of mothers and their babies.

Given their role, local governments will be key contributors to the development of strategic plans for sustaining rural labour and delivery care. By engaging in the strategic planning process, local governments can ensure that the plans are tailored to local conditions and provide the necessary resources and support for effective implementation. Their participation is vital for establishing a unified and thorough approach to preserving and improving rural health-care services.

Health organizations:

Local/rural centres (e.g., local hospitals, primary care clinics, family health teams)

Given their pivotal role in care provision, local health teams are ideally placed to sustain and enhance rural labour and delivery care. This includes promoting continuous labour and delivery medical education, recruiting and retaining competent staff, and pursuing strategic regional partnerships with other health organizations and networks for sustained rural care. By nurturing a culture of ongoing learning and excellence, local organizations can effectively attract and keep proficient labour and delivery practitioners. As key players in direct care delivery, these teams are uniquely equipped to advocate for the necessary resources and support to provide labour and delivery services, ensuring that rural communities have access to essential labour and delivery care. Therefore, their involvement in strategic plan development is essential, as their experience and detailed understanding of local needs make them invaluable contributors to creating effective, responsive, and sustainable health strategies that directly address the challenges and opportunities within rural settings.

Regional/tertiary hospitals

Tertiary care centres can significantly bolster rural labour and delivery care through strategic collaborations with rural health-care providers. These partnerships can facilitate telehealth access to specialist consultations and advanced care for remote patients, minimizing the need for travel. They can offer rural health-care professional development opportunities for training and mentorship with specialists, enhancing local care capabilities. In strategic planning, the role of tertiary care centers is crucial for both operational enhancements and strategic alignment, ensuring that rural health-care systems are robust and well-equipped to deliver high-quality labour and delivery services sustainably. Their support integrates rural labour and delivery programs with regional tertiary care centers, creating a comprehensive network that boosts the efficacy and resilience of rural health-care services.

Academic institutions:

Academic institutions can play a key role in preparing future health-care professionals to support rural labour and delivery services in Northern Ontario. They can enhance these services by integrating learning experiences across a variety of health settings, particularly rural communities, as well as by prioritizing practical exposure to labour and delivery, across their curriculum. This may include increasing clinical rotations in labour and delivery, promoting interdisciplinary training, adding simulation-based learning, creating mentorship programs, and encouraging participation in research. Such comprehensive education in labour and delivery equips future health-care providers with the competence and confidence to deliver high-quality care. Given their significant role in educational and training initiatives, academic institutions are uniquely positioned to contribute to the strategic planning process. Their insights into effective educational strategies and workforce preparation can inform broader strategic decisions, ensuring that the workforce is well-prepared to meet the specific needs of rural health-care environments. This involvement not only enriches the strategic plan with practical, evidence-based inputs but also ensures alignment between educational outputs and the labour and delivery needs of rural communities in Northern Ontario.

Professional associations:

Professional associations, such as the Canadian Medical Association or the Association of Ontario Midwives, play a pivotal role in supporting strategic plans for rural labour and delivery care. They contribute through professional development initiatives, the creation of guidelines, and advocacy efforts. These activities help ensure that health-care professionals are well-equipped with the latest knowledge and standards, which are essential for enhancing labour and delivery care in rural settings. Their advocacy work promotes policies that benefit rural health services, thereby strengthening the overall health-care system.

Indigenous Peoples:

With a substantial Indigenous population in Northern Ontario, it is critical to involve Indigenous leaders and health-care practitioners in health-care planning and service delivery. Their participation ensures that the sustainability and enhancement of rural labour and delivery services are culturally relevant, acknowledge traditional birthing practices, and address the specific health-care needs of Indigenous communities in the region.

Providers:

Providers are essential in developing the strategic plan for sustaining rural labour and delivery programs. Their insights into the system's needs and the requirements for recruiting, retaining, and supporting providers to effectively balance their professional and personal lives are invaluable. Their direct experiences and perspectives ensure that the strategic plan is precisely tailored to address the real-world challenges and opportunities in rural health-care settings, contributing significantly to crafting a more effective and strategic vision.

Patients:

Patients are fundamental in helping to sustain and enhance rural labour and delivery care. By actively participating in their health-care and providing valuable feedback, patients help shape health-care policies. Their firsthand experiences and insights allow healthcare providers and policymakers to better understand and address the specific needs of rural areas. This contribution is vital for enhancing the resilience and sustainability of rural labour and delivery care systems, ensuring that the services provided are truly aligned with the community's needs.

Each of these partners can play an important role in helping to sustain rural labour and delivery care in Northern Ontario. By working together and leveraging their strengths to address the challenges of a growing maternity care desert, they can help create sustainable, high-quality care to ensure the health and well-being of pregnant persons and their newborns.

7.4 Cost to develop a strategic plan

The development of a formal regional strategic plan from this action framework will undoubtedly be a significant undertaking that will require the allocation of financial resources. The preliminary estimate for developing this strategic plan is approximately $350,000, which includes:

1. Consultation and advisory services (~$170,000)

Considering the breadth of stakeholder engagement and the inherent complexities of developing an effective regional strategic plan, it may be advisable to hire external consultants or advisory services to provide objective facilitation. Funds should be allocated for their fees and associated expenses.

2. Research and data analysis (~$40,000)

While this action framework provides some data on the attrition of labour and delivery services in rural Northern Ontario, additional data collection and analysis will be necessary to comprehensively understand the extent and impact of service attrition. This may include gathering insights on regional demographic trends and provider availability and conducting assessments of regional health-care needs. As a result, it is important to consider allocating funding for the employment of researchers and resources dedicated to data collection, analysis, and interpretation.

3. Partner engagement (~$60,000)

Facilitating new and different levels of collaboration across stakeholders in the field of labour and delivery care will be critical in establishing a strategic plan that defines the shared action needed to address the attrition of rural labour and delivery services. With partners including health-care professionals, government agencies, community representatives, health-care educators, and thought leaders from across Northern Ontario, budgetary allocations will be needed to cover costs of travel, meetings, forums, and collaborative workshops to facilitate comprehensive input and consensus building.

4. Strategic plan development (~$50,000)

Creation of a regional strategic framework involves synthesizing research findings, stakeholder input, and expert advice into a cohesive and actionable plan that is clear, measurable, attainable, and responsive to the unique challenges and opportunities of the region. Consequently, resources will be allocated for the drafting, editing, and design of the strategic plan. Expenses related to printing, distribution, and digital dissemination should also be factored into the budget.

5. Evaluation (~$30,000)

Evaluation of the strategic plan will include assessment of the development process and the impact of the plan. The development process will be assessed concurrently and finish shortly after the strategic plan has been created. It will take 24 to 48 months to assess the impact of the strategic plan as this final evaluation will be significantly based on its implementation.

These funds should be allocated directly to the organization identified by the Ministry of Health to lead the strategic plan development. Ensuring that the financial resources flow to the designated organization will provide them with the necessary financial resources to develop a cohesive and actionable strategic plan that is clear, measurable, attainable, and responsive to the needs of the region. This investment is not merely necessary; it is fundamental for developing a unified vision for rural labour and delivery services in the region. It will provide the essential guidance and direction needed to sustain and strengthen access to labour and delivery care.

7.5 Timelines

Given the alarming decline of labour and delivery services in rural Northern Ontario, immediate action is essential. The timeline for the strategic plan's completion should be ambitious to address these urgent needs promptly. While the timeline is dependent on the involvement and availability of key partners, using this action framework as a foundation for strategic plan development, conservative estimates suggest the process will take 12 to 18 months. Following this, the final evaluation is expected to occur over the next 24 to 48 months as implementation takes place. Despite the challenges in forecasting an exact timeline, it is crucial to expedite both the planning and implementation phases to mitigate further decline and ensure the health and well-being of pregnant individuals and their families in rural Northern Ontario.

8.0 Partner actions in helping to sustain rural labour and delivery services

The successful development and implementation of a strategic plan for sustaining rural labour and delivery services in Northern Ontario relies on the active participation and commitment of key partners identified in section 7.3. The table below outlines potential actions and initiatives for these partners, which are informed by findings on facilitators of rural obstetrical programs and solutions to the identified challenges. These actions and initiatives not only support the strategic plan but also serve as essential starting points and catalysts for strategic development, helping to lead the conversation and engage key stakeholders in the planning process.

Action	Recommendations	Implementation	Partners						
			G	H	AI	PO	Pr	IP	Pt
#1 Improve labour and delivery education and training Aim: Support rural health-care teams in establishing, sustaining, and improving their knowledge and skills in labour and delivery care.	**Recommendation 1.1** Enhance comprehensive labour and delivery education for medical learners.	• Integrate competency-based training with experiential learning in rural settings.		X	**X**	X	X	X	
		• Extend clinical rotations in labour and delivery care.		X	**X**	X	X		
		• Provide opportunities outside of classroom learning to strengthen and reinforce labour and delivery knowledge and skills development.		X	**X**		X	X	
		• Establish a rural labour and delivery mentorship program that pairs medical learners with experienced rural generalists who provide labour and delivery care.	X		**X**		X		
		• Establish a bridging program that supports the transition from training to practicing labour and delivery.	X		X	**X**	X		
	Recommendation 1.2 Provide funding for continuing medical education, training, and upskilling in labour and delivery for rural health-care providers.	• Invest in labour and delivery training programs tailored for rural contexts.	X		X	**X**	X	X	
		• Invest in programs and opportunities for labour and delivery care upskilling (e.g., C-section).	X	X	X	**X**	X	X	
		• Allocate funds to encourage rural physicians to pursue labour and delivery care CME and training programs (e.g., provide locum coverage funds).	**X**	X		X			
		• Allocate funding to support the development and implementation of new rural labour and delivery training, upskilling, and CME opportunities.	**X**	X		X			
		• Allocate funds to support programs that offer rural labour and delivery care teams exposure to higher delivery volumes.	**X**	X		X			

Government (G), Health Organization (H), Academic Institutions (AI), Professional organization (PO), Provider (Pr), Indigenous Peoples (IP) Patients (Pt)

Bolded "X" indicates the partner that could lead action implementation.

Action	Recommendations	Implementation	Partners						
			G	H	AI	PO	Pr	IP	Pt
#2 Increase health human resources Aim: Increase the number of rural health-care professionals who provide labour and delivery care	**Recommendation 2.1** Recruit health-care professionals skilled in labour and delivery care to rural region	• Implement selection and admission strategies within medical schools that prioritize candidates with a rural orientation.			**X**				
		• Recruit health-care providers with labour and delivery competency.	X	X					
		• Recruit locum health-care providers with proficiency in labour and delivery care.	X	X			X		
		• Allocate funds for the recruitment of providers proficient in rural labour and delivery care.	X	X					
		• Ensure remuneration adequately recognizes rural provision of labour and delivery care.	X	X	X	**X**	X		
		• Establish rural mentorship programs to support new graduates entering labour and delivery practice.	X	X		**X**	X		
		• Recruit and integrate midwives into rural interprofessional health teams.	X	X		**X**			
	Recommendation 2.2 Develop initiatives to support and retain rural health-care professionals offering labour and delivery care.	• Ensure sufficient work-life balance of current labour and delivery care providers by maintaining sufficient staffing level.	X	X	X		X		
		• Implement remuneration and incentives for providers of rural labour and delivery care, based on the degree of rurality and tenure.	X	X	X	**X**			
		• Establish peer-to-peer support networks for rural physicians who practice labour and delivery care.	**X**	X	X	X	X		
		• Establish peer-to-peer support networks specifically for those rural physicians who provide C-section and other surgical skills.	**X**	X	X	X	X		

Action	Recommendations	Implementation	Partners						
			G	H	AI	PO	Pr	IP	Pt
#3 Build support Aim: Develop and strengthen partnerships, policies, and programs to support rural labour and delivery services.	**Recommendation 3.1** Establish cross-sector partnerships to support rural labour and delivery care.	• Develop or charge an organization to implement, manage, and evaluate the changes needed to improve the sustainability of rural labour and delivery care in Northern Ontario.	X	X	**X**	X	X	X	X
		• Create strategic plans customized to meet the requirements of small (1A) rural hospitals with the aim of ensuring their sustained labour and delivery services.	X	X			X	X	X
		• Consider an obstetrical shared care practice model to enhance collaborative care among health-care professionals.	X	X	**X**	X	X		
		• Explore alternative funding models for labour and delivery care that extend beyond the conventional fee-for-service approaches.	X	X		X	X		
		• Encourage coordinated efforts among community, regional, and provincial stakeholders to fortify the infrastructure and services supporting rural labour and delivery care.	X	X	X	**X**	X	X	X
	Recommendation 3.2 Develop targeted infrastructure, policies, and programs to support rural labour and delivery in Northern Ontario.	• Allocate funding to hospitals specifically designated for the support and enhancement of rural labour and delivery programs.	X	X					
		• Encourage health-care professionals to acquire additional specialty skills relevant to labour and delivery (e.g., surgery, anesthesia).	X	X	X				
		• Facilitate increased exposure to births by establishing partnerships with higher birth volume centres.	**X**	X			X		
		• Invest in and upgrade supportive infrastructure for labour and delivery services.	**X**	X					
		• Provide information on risks and benefits of delivering in a rural setting to empower patients to make informed decisions about their care.		X			X	X	X
		• Enhance community outreach and educational initiatives focused on labour and delivery care.		X			X	X	X
		• Implement measures to enhance patient transportation services, ensuring timely access to the appropriate level of labour and delivery care required.	**X**	X			X	X	X
		• Improve access to C-sections.	**X**	X	X	X			

9.0 Measuring success of this action framework development

The primary measure of success for this action plan will be its effectiveness in establishing a thorough, region-wide strategic plan for sustaining rural labour and delivery care. This plan should not only outline the current state of rural labour and delivery care but also propose actionable strategies aimed at addressing the identified challenges. The comprehensiveness, clarity, and feasibility of the plan are critical metrics of success.

Key questions for measuring the plan's success include:

1. Partner engagement:

- To what extent has this action plan motivated stakeholders in the rural labour and delivery care sector to engage in the development of a strategic plan dedicated to sustaining these services in rural Northern Ontario?
- Are stakeholders actively participating in the planning process, and are their contributions being effectively integrated into the strategic plan?

2. Addressing barriers:

- How well does the strategic plan address and incorporate solutions to the barriers to rural labour and delivery services that were identified in the action plan?
- Are the proposed strategic initiatives practical and tailored to the specific needs of rural communities?

3. Implementation of recommendations:

- Has the strategic plan incorporated the specific actions recommended for labour and delivery partners as detailed in the action plan?

4. Sustainability:

- Does the strategic plan provide a clear framework for the sustainability of labour and delivery services in rural areas?

References

1. Canadian Institute for Health Information. Hospital Births in Canada: A Focus on Women Living in Rural and Remote Areas [Internet]. n.d. [cited 2024 Apr 18]. Available from: https://publications.gc.ca/collections/collection_2013/icis-cihi/H118-89-2013-eng.pdf

2. Government of Ontario. Socioeconomic facts and data about rural Ontario [Internet]. 2023 [cited 2024 May 18]. Available from: http://www.ontario.ca/page/socioeconomic-facts-and-data-about-rural-ontario

3. Government of Ontario. Your Health: A Plan for Connected and Convenient Care [Internet]. 2023 [cited 2024 April 18]. Available from: https://files.ontario.ca/moh-your-health-plan-connected-convenient-care-en-2023-02-02-v3.pdf

4. Orrantia E, Hutten-Czapski P, Mercier M, Fageria S. Northern Ontario's Obstetrical Services in 2020: A developing rural maternity care desert. Can J Rural Med. 2022 Apr-Jun;27(2):61-68. doi: 10.4103/cjrm.cjrm_4_21. PMID: 35343183.

5. Hutten-Czapski P. Decline of obstetrical services in northern Ontario. Can J Rural Med. 1999 Apr 1;4(2):72.

6. Miller KJ, Couchie C, Ehman W, Graves L, Grzybowski S, Medves J. No. 282-Rural Maternity Care. J Obstet Gynaecol Can. 2017 Dec;39(12):e558-e565. doi: 10.1016/j.jogc.2017.10.019. PMID: 29197493.

7. Iglesias S, Kornelsen J, Woollard R, Caron N, Warnock G, Friesen R, Miles P, Vogt Haines V, Batchelor B, Blake J, Mazowita G, Wyman R, Geller B, de Klerk B. Joint position paper on rural surgery and operative delivery. Can J Rural Med. 2015 Fall;20(4):129-38. PMID: 26447732.

8. Darling EK, Lawford KMO, Wilson K, Kryzanauskas M, Bourgeault IL. Distance from Home Birth to Emergency Obstetric Services and Neonatal Outcomes: A Cohort Study. J Midwifery Womens Health. 2019 Mar;64(2):170-178. doi: 10.1111/jmwh.12896. Epub 2018 Oct 16. PMID: 30325580.

9. Kornelsen J, McCartney K, Williams K. Centralized or decentralized perinatal surgical care for rural women: a realist review of the evidence on safety. BMC Health Serv Res. 2016 Aug 13;16(1):381. doi: 10.1186/s12913-016-1629-6. PMID: 27522230; PMCID: PMC4983412.

10. Lawerence, C (Regional Coordinator of Northern Maternal Child Network) in conversation with Eliseo Orrantia re: Closure of obstetrical programs in rural Northern Ontario since 2020. 2023 Aug 08.

11. Health Quality Ontario. Health in the North: A report on geography and the health of people in Ontario's two northern regions [Internet]. 2017 [cited 2024 May 18]. Available from: https://www.hqontario.ca/portals/0/Documents/system-performance/health-in-the-north-en.pdf

12. Statistics Canada. 2021 Census of Population [Internet]. 2021 [cited 2024 May 18]. Available from: https://www12.statcan.gc.ca/census-recensement/index-eng.cfm

13. Better Outcomes Registry & Network (BORN). Straight-line distance to hospital for pregnant residents of Ontario Health North with a hospital birth in Ontario Health North by fiscal year, by hospital [Unpublished]. 2022 [cited 2024 Apr 18].

14. Larimore WL, Davis A. Relation of infant mortality to the availability of maternity care in rural Florida. J Am Board Fam Pract. 1995 Sep-Oct;8(5):392-9. PMID: 7484227.

15. Nesbitt TS, Connell FA, Hart LG, Rosenblatt RA. Access to obstetric care in rural areas: effect on birth outcomes. Am J Public Health. 1990 Jul;80(7):814-8. doi: 10.2105/ajph.80.7.814. PMID: 2356904; PMCID: PMC1404977.

16. Grzybowski S, Stoll K, Kornelsen J. Distance matters: a population based study examining access to maternity services for rural women. BMC Health Serv Res. 2011 Jun 10;11:147. doi: 10.1186/1472-6963-11-147. PMID: 21663676; PMCID: PMC3126704.

17. Luke S, Hobbs A, Mak S, Der K, Pederson A, Schummers L. Travel Time to Delivery, Antenatal Care, and Birth Outcomes: A Population-Based Cohort of Uncomplicated Pregnancies in British Columbia, 2012-2019. J Obstet Gynaecol Can. 2022 Aug;44(8):886-894. doi: 10.1016/j.jogc.2022.04.009. Epub 2022 May 5. PMID: 35525429.

18. Kornelsen J, Stoll K, Grzybowski S. Stress and anxiety associated with lack of access to maternity services for rural parturient women. Aust J Rural Health. 2011 Feb;19(1):9-14. doi: 10.1111/j.1440-1584.2010.01170.x. PMID: 21265919.

19. Hoang H, Le Q, Ogden K. Women's maternity care needs and related service models in rural areas: A comprehensive systematic review of qualitative evidence. Women Birth. 2014 Dec;27(4):233-41. doi: 10.1016/j.wombi.2014.06.005. Epub 2014 Jul 11. PMID: 25028188.

20. Kornelsen J, Moola S, Grzybowski S. Does distance matter? Increased induction rates for rural women who have to travel for intrapartum care. J Obstet Gynaecol Can. 2009 Jan;31(1):21-7. doi: 10.1016/s1701-2163(16)34049-x. PMID: 19208279.

21. Lisonkova S, Haslam MD, Dahlgren L, Chen I, Synnes AR, Lim KI. Maternal morbidity and perinatal outcomes among women in rural versus urban areas. CMAJ. 2016 Dec 6;188(17-18):E456-E465. doi: 10.1503/cmaj.151382. Epub 2016 Sep 26. PMID: 27672220; PMCID: PMC5135522.

22. Matheson K, Seymour A, Landry J, Ventura K, Arsenault E, Anisman H. Canada's Colonial Genocide of Indigenous Peoples: A Review of the Psychosocial and Neurobiological Processes Linking Trauma and Intergenerational Outcomes. Int J Environ Res Public Health. 2022 May 26;19(11):6455. doi: 10.3390/ijerph19116455. PMID: 35682038; PMCID: PMC9179992.

23. Phillips-Beck W, Eni R, Lavoie JG, Avery Kinew K, Kyoon Achan G, Katz A. Confronting Racism within the Canadian Healthcare System: Systemic Exclusion of First Nations from Quality and Consistent Care. Int J Environ Res Public Health. 2020 Nov 11;17(22):8343. doi: 10.3390/ijerph17228343. PMID: 33187304; PMCID: PMC7697016.

24. Hayward A, Cidro J. Indigenous Birth as Ceremony and a Human Right. Health Hum Rights. 2021 Jun;23(1):213-224. PMID: 34194214; PMCID: PMC8233033.

25. Public Health Agency of Canada. Chapter 1: Family-centred maternity and newborn care in Canada: Underlying philosophy and principles [Internet]. 2017 [cited 2024 May 10]. Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-1.html

26. Burnett K, Sanders C, Halperin D, Halperin S. Indigenous Peoples, settler colonialism, and access to health care in rural and northern Ontario. Health Place. 2020 Nov;66:102445. doi: 10.1016/j.healthplace.2020.102445. Epub 2020 Oct 5. PMID: 33032242.

27. Statistics Canada - The Daily. Indigenous population continues to grow and is much younger than the non-Indigenous population, although the pace of growth has slowed [Internet]. 2022 [cited 2024 May 18]. Available from: https://www150.statcan.gc.ca/n1/daily-quotidien/220921/dq220921a-eng.html

28. Smylie J, O'Brien K, Beaudoin E, Daoud N, Bourgeois C, George EH, Bebee K, Ryan C. Long-distance travel for birthing among Indigenous and non-Indigenous pregnant people in Canada. CMAJ. 2021 Jun 21;193(25):E948-E955. doi: 10.1503/cmaj.201903. PMID: 34155046; PMCID: PMC8248471.

29. Public Health Agency of Canada. Infographic: Inequalities in infant mortality in Canada [Internet]. 2017 [cited 2024 Jun 1]. Available from: https://www.canada.ca/en/public-health/services/publications/science-research-data/inequalities-infant-mortality-infographic.html

30. Truth and Reconciliation Commission of Canada. Truth and Reconciliation Commission of Canada: Calls to Action [Internet]. 2015 [cited 2024 Jun 1]. Available from: https://www2.gov.bc.ca/assets/gov/british-columbians-our-governments/indigenous-people/aboriginal-peoples-documents/calls_to_action_english2.pdf

31. Cree Board of Health and Social Sciences of James Bay. Celebrating the Return of Childbirth to the Cree Territory of Quebec [Internet]. 2018 [cited 2024 Jun 2]. Available from: https://www.creehealth.org/news/celebrating-return-childbirth-cree-territory-quebec

32. Waasegiizhig Nanaandawe'iyewigamig. Health Services. [Internet]. n.d. [cited 2024 Jun 1]. Available from: https://www.wnhac.org/index.php/health-services/

33. Midwives In Attawapiskat [Internet]. 2021 [cited 2024 Jun 1]. Available from: https://www.ontariomidwives.ca/sites/default/files/Career%20Postings/NeepeeshowanDecember20211214.pdf

34. Kornelsen J, Khowaja AR, Av-Gay G, Sullivan E, Parajulee A, Dunnebacke M, Egan D, Balas M, Williamson P. The rural tax: comprehensive out-of-pocket costs associated with patient travel in British Columbia. BMC Health Serv Res. 2021 Aug 21;21(1):854. doi: 10.1186/s12913-021-06833-2. PMID: 34419025; PMCID: PMC8380105.

35. Public Health Agency of Canada. Chapter 3: Care during pregnancy [Internet]. 2020 [cited 202 Jun 2]. Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-3.html

36. Udegbe BC, Clapp MA, Bryant AS. Disparities from bedside to "webside": barriers to achieving equity in telemedicine in obstetrics. AJOG Glob Rep. 2023 Feb;3(1):100159. doi: 10.1016/j.xagr.2022.100159. Epub 2023 Jan 3. PMID: 36618830; PMCID: PMC9807454.

37. Palmer KR, Tanner M, Davies-Tuck M, Rindt A, Papacostas K, Giles ML, Brown K, Diamandis H, Fradkin R, Stewart AE, Rolnik DL, Stripp A, Wallace EM, Mol BW, Hodges RJ. Widespread implementation of a low-cost telehealth service in the delivery of antenatal care during the COVID-19 pandemic: an interrupted time-series analysis. Lancet. 2021 Jul 3;398(10294):41-52. doi: 10.1016/S0140-6736(21)00668-1. PMID: 34217399; PMCID: PMC8248925.

38. Public Health Agency of Canada. Chapter 8: Organization of services [Internet]. 2022 [cited 2024 Jun 1]. Available from: https://www.canada.ca/en/public-health/services/publications/healthy-living/maternity-newborn-care-guidelines-chapter-8.html

39. Ronald McDonald House Charities Canada. RMHC Homepage [Internet]. n.d. [cited 2024 Jun 1]. Available from: https://www.rmhccanada.ca

40. Wallace AR, Splinter K. Does proximity to a fertility centre increase the chance of achieving pregnancy in Northeastern Ontario? Can J Rural Med. 2024 Apr 1;29(2):63-70. English, French. doi: 10.4103/cjrm.cjrm_20_23. Epub 2024 May 14. PMID: 38709016.

41. Haile TG, Pereira G, Norman R, Tessema GA. Economic burden of adverse perinatal outcomes from births to age 5 years in high-income settings: a protocol for a systematic review. BMJ Open. 2024 Jan 12;14(1):e079077. doi: 10.1136/bmjopen-2023-079077. PMID: 38216187; PMCID: PMC10806659.

42. Johnston KM, Gooch K, Korol E, Vo P, Eyawo O, Bradt P, Levy A. The economic burden of prematurity in Canada. BMC Pediatr. 2014 Apr 5;14:93. doi: 10.1186/1471-2431-14-93. PMID: 24708755; PMCID: PMC4108009.

43. RANZCOG. Rural, Regional and Remote Women's Health Strategy [Internet]. 2024 [cited 2024 Jun 1]. Available from: https://ranzcog.edu.au/news/rural-regional-remote-womens-health-strategy/

44. Rural Coordination Centre British Columbia. RCCbc Homepage [Internet]. 2024 [cited 2024 Jun 1]. Available from: https://rccbc.ca/

Appendix 1.0 – Estimating Northern Ontario's rural population within birthing age

To estimate the rural population in Northern Ontario within birthing age, we consider individuals typically within the reproductive age range of 15-49 years. The estimation involved using population data and demographic distribution.

Step 1: Percentage of Northern Ontarians living in rural areas

	Value
Percentage living in rural areas in Northwestern Ontario (NWO)	34.2%
Percentage living in rural areas in Northeastern Ontario (NEO)	30.2%

Assumptions:

- The percentages of individually living in rural areas in NWO and NEO have remained unchanged since 2017.[11]

Step 2: Age Distribution of Women in Rural Areas in Northern Ontario

Age	Women by age group (total population)	Rural women by age group (NWO)	Women by age Group (NEO)	Women by age group (NEO)
15-19	6,085	2,081	13,420	4,053
20-24	6,515	2,228	14,240	4,300
25-29	7,400	2,531	15,355	4,637
30-34	7,185	2,457	15,990	4,829
35-39	6,875	2,351	16,095	4,861
40-44	6,500	2,223	15,740	4,753
45-49	6,535	2,235	16,040	4,844
Total	47,095	**16,106**	106,880	**32,278**

Assumptions:

- The birthing age range is from 15 to 49 years.
- The age distribution aligns with data reported in the 2021 census.[12]
- The rural population is evenly distributed across the birthing age range.

Step 3: Adjusting for population growth

	Value
Population of rural Northern Ontario within birthing age in 2021	48,384
Canada's rural population growth (annually)	1.28%
Population of rural Northern Ontario within birthing age in 2024	50,266

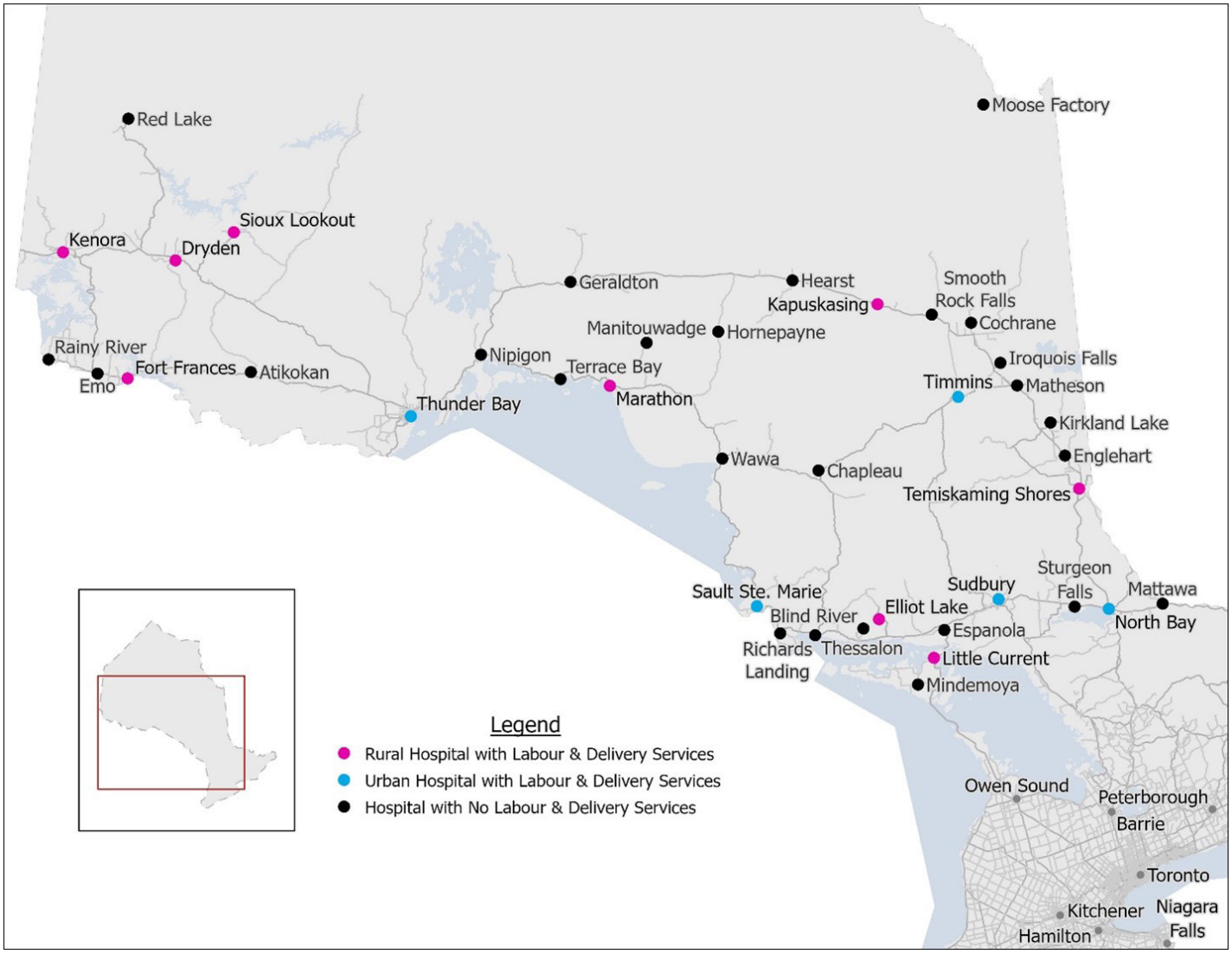
Assumptions:

- Rural Northern Ontario has experienced the same growth rate as the rest of rural Canada.[12]
- The annual growth rate of the rural population has remained constant.

Conclusion

Based on the available data and assumptions, the estimated rural population within birthing age (15-49 years) in Northern Ontario in 2024 is approximately 50,266.

Appendix 2.0 – Map of Northern Ontario Labour & Delivery Programs as of 2024



Appendix 3.0 – Cost calculations for medical travel for labour and delivery care

Step 1: Number of pregnant persons travelling for care in rural Northern Ontario

	Value
Number of Births to pregnant persons that had to travel for care	1,213

Assumptions:

- The number of those traveling for care in 2021-2022, reported by BORN, is representative of the pregnant persons who typically travel for care each year.[13]

Step 2: Expense for travel, accommodation and loss of wages

	Average Cost
Travel	$856
Accommodation	$145/night
Lost wages	$133/day

Assumptions:

- Costs of travel, accommodation, and loss of income are similar to what is reported for rural residents in British Columbia.[34]
- Travel includes round-trip costs

Step 3: Expense based on duration of travel

	Average Cost
Travel	$856
Accommodation	$2,030
Lost Wages	$1,862
Total	**$4,748**

Assumptions:

- Duration of stay in the urban center can vary based on the needs and circumstances of each individual case. For estimation purposes, we assume a stay of 14 days.
- Each person who travelled stayed in a hotel.

Step 4: Cost for medical travel for labour and delivery care

	Average Cost
Cost of travel, accommodation and loss of wage per person	$4,748
Number of Births to pregnant persons that had to travel for care	1,213
Total Cost	**$5,759,324**

Conclusion:

The total estimated cost for all rural pregnant persons in Northern Ontario who had to travel to an urban center for labour and delivery care, assuming a 14-day stay, amounts to $5,759,324.

Appendix 4.0 – Cost calculation of Neonatal Intensive Care Unit (NICU) stays for infants born to mothers who travelled for labour and delivery care

Step 1: Rate of NICU bed days based on travel time

Travel time to health-care facility offering labour and delivery care	NICU bed days per 1,000 births
1-2 hours	100
2-4 hours	179

Assumptions:

- The rate of NICU bed days for infants whose mothers travelled for labour and delivery services is consistent with rates reported in British Columbia.[16]

Step 2: Births to mothers who were required to travel one hour or more to reach labour and delivery centres in Northern Ontario

Travel time to health-care facility offering labour and delivery care	Number of births
1-2 hours	636
2-4 hours	577

Assumptions:

- Those travelling to health-care facilities were from rural Northern Ontario.

Step 3: NICU bed days based on travel duration

	Value
NICU bed days for infants whose mothers travelled 1-2 hours	63.6
NICU bed days for infants whose mothers travelled 2-4 hours	103.2
Total NICU bed days	**166.8**

Step 4: Total cost of NICU stays for infants born to mothers who travelled for labour and delivery care

	Value
Cost of 1 NICU bed day	$2,500
Total NICU bed days occupied by infants whose mother travelled for labour and delivery care	166.8
Total cost	**$417,00**

Assumptions:

- The cost per NICU bed day is $2,500.[16]

Conclusion

Based on the available data and assumptions, the estimated annual cost associated with NICU stays for infants whose mothers travelled to give birth is $417,000.

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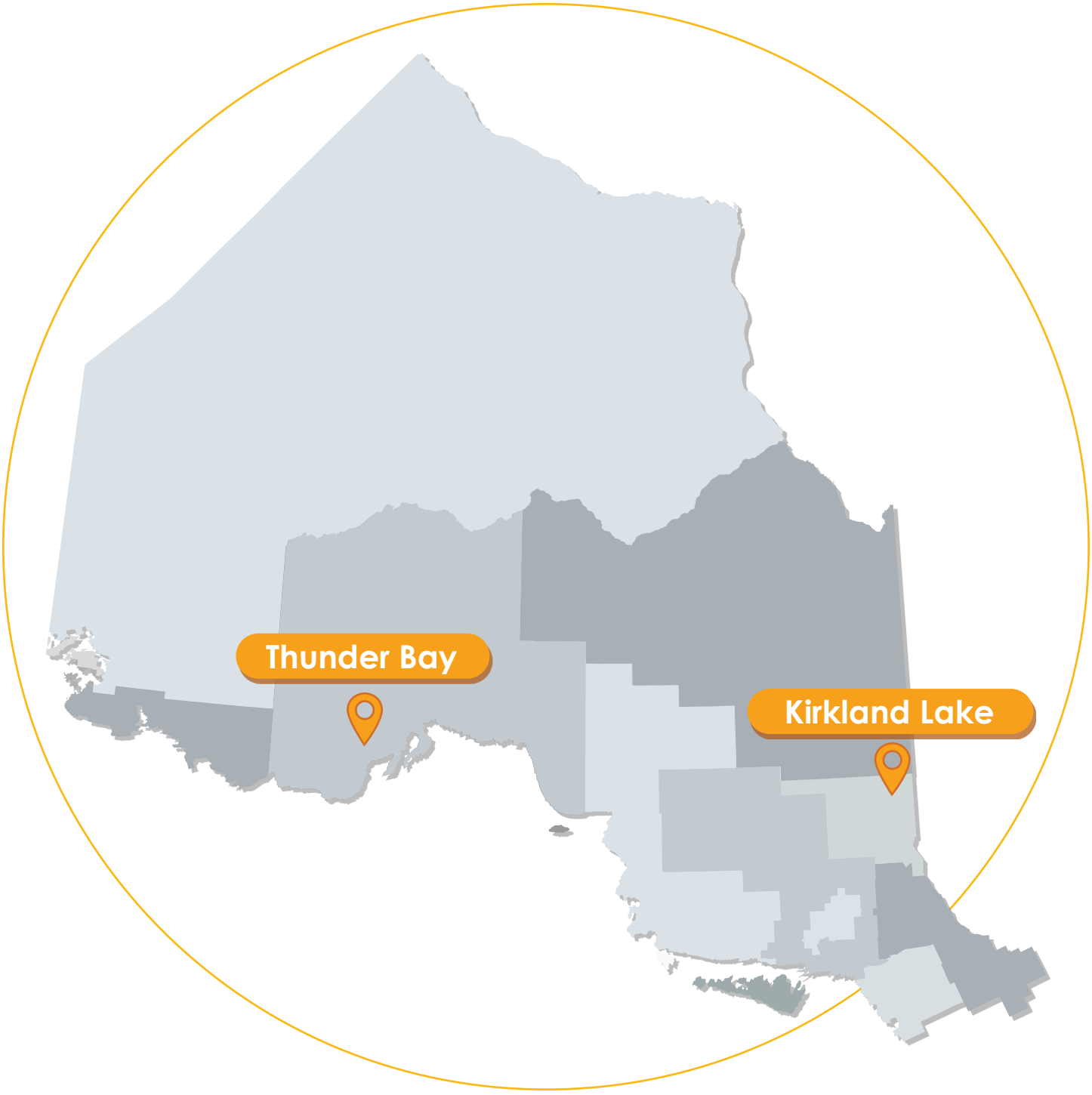

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