Rural Ontario Foresight Papers

Access to Quality Medical and Health Services & Northern Perspective

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Access to Quality Medical and Health Services: Examples from Northern Ontario

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Introduction

Rural areas in Ontario, much like other rural areas in Canada and around the globe, typically have poorer access to healthcare services and poorer population health outcomes while simultaneously having a stronger sense of community and willingness to make do with whatever resources are available. This dynamic tension often leads to innovations in healthcare programs — innovations that have a positive effect in rural areas and can also benefit urbanized areas. As Ontario transforms its healthcare system, the timing is right to develop and implement innovative programs of healthcare delivery in rural Ontario.

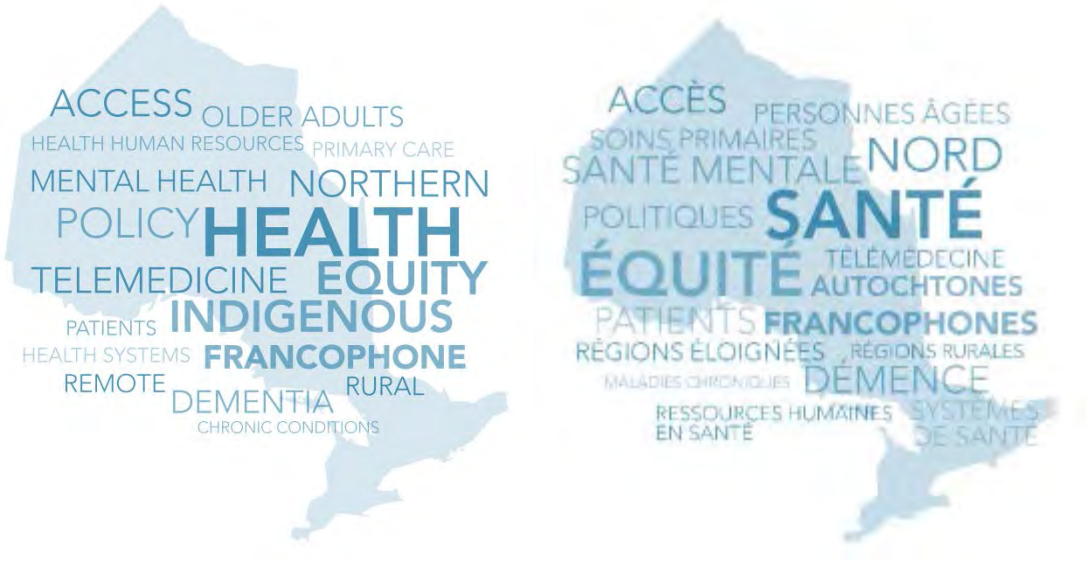
The challenges and the need for innovation are particularly acute in rural areas in Northern Ontario, and throughout Northern Ontario as a whole. In Northern Ontario, 780,000 people are dispersed across 803,000 km^2 (Statistics Canada 2019). Approximately 56% of the population are clustered in five large urban areas with 42,000 to 162,000 people (Timmins, North Bay, Sault Ste. Marie, Thunder Bay and Sudbury). Relative to all of Ontario, Northern Ontario also has a higher percentage of two cultural-linguistic minorities: Indigenous people and Francophones (Statistics Canada 2017a,b; Ontario Ministry of Francophone Affairs 2019). Relative to the rest of the province, Northern Ontario is less-densely populated, less-developed, with poorer access to healthcare services and often, poorer health outcomes.

This Rural Ontario Foresight Paper describes a few programs that have had positive effects in rural areas of Northern Ontario as well as having the potential and, sometimes, demonstrated positive impact in urban or southern regions.

The reality and misconceptions about rural health services

Rural areas, relative to urban areas, typically have lower health status, poorer health behaviours, lower educational attainment and poorer access to health care (MacMillian et al. 2003; Bouchard et al. 2012; Pong et al. 2011; Timony et al. 2013; Statistics Canada 2013a,b; Wenghofer et al. 2014; Glazier et al. 2018) — this is the reality. This is also true of less-developed regions such as Northern Ontario, relative to Southern Ontario, as well as Indigenous and Francophone peoples, relative to the general population of the province. However, it is a misconception to assume that all rural or less-developed regions exhibit these characteristics or that everyone living in these regions or who

identify as an Indigenous person or as a Francophone has lower health status, poorer health behaviours and so forth.



Word maps of health issues in Northern Ontario
(Images courtesy of the Centre for Rural and Northern Health Research-Laurentian)

Another misconception is that healthcare professionals who choose to practice in these areas are somehow less able than are their urban counterparts (e.g., Fors 2018). The reality is that rural practice often differs from urban practice, and practice in less-developed regions differs from practice in more developed regions — this poses challenges as well as opportunities. For example, relative to their urban counterparts, rural medical doctors typically provide more services or procedures (Hogenbirk et al. 2004; Wenghofer et al. 2018). Many health professional education programs offer placements in rural areas or in less-developed regions because educators and policy makers recognize the benefits of a diverse educational experience for program learners, and because educators and policy makers recognize the need for more diverse training for those who practice in these regions (Strasser et al. 2016; Strasser and Cheu 2018).

It is also the reality that many rural areas or less-developed regions serve as models of resilience and as innovators of healthcare service delivery. In addition, these areas are the harbingers of an aging province and, with the exception of some communities, typically have populations that are older than other parts of Ontario (McDonald 2012; Ministry of Finance 2018). The uniqueness of Northern Ontario's vast geography and more-sparsely populated regions adds to the complexity of rural health services delivery for an older population known to have poorer access and lower health status than Southern Ontario (e.g., Glazier et al. 2018). As such, rural and remote communities in the less-developed region of Northern Ontario can offer the harshest proving grounds for healthcare programs — some of these programs are outlined in the following sections.

Program Exemplars

Northern Ontario School of Medicine

The Northern Ontario School of Medicine (NOSM) is one of a few medical schools in the world with an explicit social accountability mandate to improve the health and well-being of the people of its service region (Strasser et al. 2009; 2018). Beginning in 2005, with the first cohort of students enrolled at the NOSM, researchers from the Centre for Rural and Northern Health Research (CRaNHR) – Laurentian University, with the guidance and support of senior NOSM personnel, have been conducting studies to evaluate how NOSM has helped improve access to medical and healthcare providers in Northern Ontario.

Consistent with its social accountability mandate, NOSM developed Distributed Community Engaged Learning (DCEL) as its distinctive model of medical education and health research (Strasser et al. 2009). Community engagement involves active community participation and occurs through interdependent partnerships between the School and the communities for mutual benefit (Strasser et al 2015). Community engagement drove the development of NOSM's comprehensive life-cycle approach, which begins in high school and extends through to continuing medical education. NOSM's admissions process seeks to reflect the population distribution of Northern Ontario in each class, specifically promoting applicants from Northern Ontario, or similar backgrounds. Community members play a vital role in selecting students for the four-year MD program, educating students by serving as standardized patients, and providing local support for students during their community placements (Strasser et al 2013).

Northern Ontario School of Medicine (NOSM) Lakehead and Laurentian Sites
(images courtesy of the Northern Ontario School of Medicine)

Studies that examined data from applications to NOSM from 2006 – 2015 found that 37% of all NOSM students were from rural communities and small towns of ≤40,000 people. This percentage is close to 42%, which is the percentage of people in rural areas or small towns in the service region based on 2011 Census data. NOSM's service region includes the area bounded by the Northeast and Northwest Local Health Integration Networks (LHINs), as well as the part of the North Simcoe-

Muskoka LHIN that is north of the Severn River. Having a student population that represents the population of the service area is a key goal of NOSM's social accountability mandate. Approximately 92% of students were from the service region and the remaining 8% are from other Northern areas in Canada. Approximately 22% had a Francophone background, which exceeds the goal of 16%. Approximately 7% had an Indigenous background, which was below the goal of 12%. However, in 2016, NOSM modified its selection process, based in part on CRaNHR's research, and the percent of students of Indigenous background increased to 12% in the next 2 years (Mian et al. 2019). In all, this shows that NOSM has been successful in selecting a student population that is representative of the service region.

Medical students at the Northern Ontario School of Medicine
(image courtesy of the Northern Ontario School of Medicine)

NOSM's curriculum includes three 4-week placements in rural and First Nation communities in the first two years, and, in the third year, an 8-month longitudinal integrated clerkship in midsize cities (populations of 5,000-78,000 people) (Strasser et al. 2009). This curriculum, coupled with a student population drawn from the region, can help to improve access to medical care by producing a skilled and diverse medical workforce with cultural/linguistic competencies that enable a fuller understanding of the people of rural and Northern Ontario and their medical care needs.

> *Some communities were still experiencing challenges in physician recruitment, but all were looking to NOSM as the primary source for new doctors.*

As part of the tracking study, CRaNHR has data on over 500 NOSM undergraduate medical students who entered NOSM from 2005 to 2013 and graduated 4 years later. As of April 2018, survey data on 80% of these students showed that 62% were admitted to family medicine residency training programs. Almost all of the remainder, 29%, matched to generalist specialties (Royal College of Physicians and Surgeons of Canada (RCPSC) specialties) that are in high demand in Northern Ontario.

Studies that examined the first two or three cohorts of family medicine graduates (College of Family Physicians of Canada (CFPC) Family Physician (FP) specialty) found that many of these FPs were practising in Northern Ontario or in rural Ontario (Hogenbirk et al. 2016; Wenghofer et al. 2017). As of April 2018, 14% of 313 FPs located their primary medical practice in Northern Ontario communities of ≤10,000 people, 48% in larger Northern Ontario communities and 8% in southern Ontario communities of ≤10,000 people. In 2018, 26% of 68 Royal College specialists had their primary medical practice in Northern Ontario. Overall, NOSM has been successful in graduating medical doctors who go on to become family physicians and generalist specialists with the potential to provide a broad range of medical and surgical care services to people across Northern Ontario and in other underserviced areas of the province.

In 2014, CRaNHR researchers conducted 10 interviews with knowledgeable individuals from 8 Northern Ontario communities (Mian et al. 2017). All 8 communities had been chronically underserviced, all were training NOSM learners and all had recently recruited NOSM graduates. Overall, interviewees reported that 29 full-time historic physician vacancies had been reduced to 1 vacancy. Interviewees also noted lower costs for travel to physician recruitment job fairs in southern Ontario and for physician incentive packages. Some communities were still experiencing challenges in physician recruitment, but all were looking to NOSM as the primary source for new doctors. In addition, most communities were reported to have become less reliant on short-term (locum) contracts to supply the medical care needs of people in the community.

A CRaNHR study examined the social and economic impact of NOSM in 2008 when it was in its third year of operation (Hogenbirk et al. 2015b). The economic impact study was repeated when NOSM was beginning its fourteenth year of operation with wide-ranging and mature medical education and medical residency programs, as well as many other health professional education programs (i.e., dietetic, audiology, occupational therapy, physiotherapy, speech-language pathology, physician assistant, medical physics, pharmacy and interprofessional education programs) (https://www.nosm.ca/education/). In Fiscal Year 2017–2018, an estimated $70 million (M) was spent by NOSM personnel, learners and teachers in the service region. The spending and re-spending of these monies was worth an estimated $125M to $137M of economic activity per year. Overall spending was estimated to support 780 to 860 full-time equivalent jobs. NOSM's community engaged distributed medical program is also a distributed economic impact program (Hogenbirk et al. in preparation).

To summarize, ongoing studies show that NOSM is producing family physicians and generalist specialists, of whom 56% have set up their medical practice in the service region. NOSM also has a demonstrated positive effect on FP recruitment in some of the small towns, though more work needs to be done to recruit physicians to these communities. In addition, NOSM has had a substantial positive impact on economic activity and employment. These largely positive impacts are direct consequences of NOSM's distributed community engaged learning medical education program that has garnered international attention and accolades. NOSM is an innovative solution to the problem of physician maldistribution that is common across underserved areas of Ontario and,

as such, some or many of NOSM's programs and approaches could be adapted and implemented to increase recruitment and retention of physicians in rural southern Ontario.

Ontario Telemedicine Network

The Ontario Telemedicine Network (OTN) is a not-for-profit organization funded by the Government of Ontario to facilitate virtual care services throughout the province (https://otn.ca, Brown 2013). OTN is the largest telemedicine service provider in Canada (COACH 2015) and also one of the largest in the world (Holmes and Hart 2009). Facilities with OTN units enable access to all levels of medical care services for people living in underserved areas such as rural or Northern Ontario. OTN units are often located in healthcare centres including hospitals, nursing stations, health/medical care clinics, public health units, treatment centres and in the patient's home (https://otn.ca). These units are connected to OTN's secure virtual private network (VPN) communications system.

A study conducted in 2014 found that there were 2,331 OTN units, of which 552 (24%) were located in Northern Ontario (O'Gorman and Hogenbirk 2016). The majority of communities with 50 or more people in Northern Ontario (690/802=86%) had OTN units or were within an hour's drive of a unit. However, the presence of a unit does not guarantee access. For example, units in many facilities are used only for patients of that facility (e.g., long term care facility) and not readily available to other patients or to the general public. In addition, some clinicians are enthusiastic users of OTN-facilitated services while others are less enthusiastic and this can affect local access and utilization. Nonetheless, the study did show that the distribution of OTN units has the potential to increase access to and use of medical services and reduce the need for medically related travel.

A parallel study used medical service billing data (Ontario Health Insurance Plan-OHIP data) to compare clinical telemedicine utilization in four regions of Ontario: urban Northern Ontario; rural Northern Ontario; urban Southern Ontario; and rural Southern Ontario (O'Gorman et al. 2016). This second study reported on 652,337 OHIP-OTN patient visits in Ontario in fiscal years 2008/2009 to 2013/2014. Northern Ontario had higher annual utilization rates per 1,000 people (rural 52.0, urban 32.1) than Southern Ontario (rural 6.1, urban 3.1). Per capita use was highest and occurred across more therapeutic areas of care in rural Northern Ontario. Urban Northern Ontario had higher per capita use than either urban or rural Southern Ontario. Recently completed graduate work (Lowey 2019) also found the same geographic patterns in per capita use, with additional insights into age and sex differences.

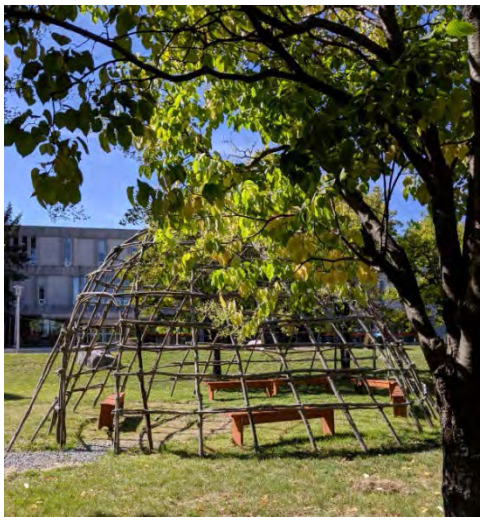
The majority of clinical telemedicine sessions are for mental health and addictions and a subsequent study took a detailed look at this category, focusing on the use of telemedicine in the treatment of opioid dependency (Eibl et al. 2017). The misuse of opioids is a North American public health crisis, for which the standard of care is opioid agonist therapy (OAT). Retention in treatment is a key marker of success, and data from 3,733 patients found that those treated primarily via telemedicine were 1.3 times more likely to stay in therapy than patients treated primarily in-person (50% versus 39%). The conclusion is that telemedicine is an effective method of delivering OAT, with the potential to improve access in rural and other underserved regions.

Although it is not known if overall access to care is increasing in rural and Northern Ontario, collectively, these findings suggest that OTN-facilitated clinical sessions are highest in traditionally underserved areas and are likely improving access to medical care services, particularly in sparsely populated regions of the province.

Indigenous Programs

Northern Ontario is the territorial homeland of Cree and Anishinaabe peoples and is covered by three overarching agreements between settlers and First Nations peoples: Treaty 3; Treaty 9; and the Robinson-Huron Treaty. It is also part of the Métis Nation. Over a third (34%) of Indigenous people in Ontario live in Northern Ontario, compared with only 6% of the overall Ontario population (Statistics Canada 2017a,b). While 3% of the overall Ontario population self-identifies as Indigenous, 25% (~59,000) of the people in Northwestern Ontario and 13% (~70,000) in Northeastern Ontario identify as Indigenous.

Northern Ontario holds many diverse stories and unique contrasts for First Nations communities. It carries stories of extreme poverty and marginalization, but also stories of resilience and strength. The centrality of land, displacement from land and environmental racism are important determinants of Indigenous peoples' health in Northern Ontario (Richmond 2015). This displacement is an ongoing challenge for First Nation communities that are regularly evacuated due to forest fires and flooding, and for whom primary or tertiary health care and secondary schools are not available in their communities. Access to health care is challenging for First Nations communities, particularly for the 30 or so communities in Northern Ontario that are fly-in or with limited land links, such as railways or winter (ice) roads. First Nations in Northern Ontario have declared states of emergency for housing shortages, water quality and youth suicides, and too often see their children and women among the missing and murdered. Yet the collective and community-grounded commitment to wellbeing and equity has woven counter-stories of strength.



Wigwam at Laurentian University

Image courtesy of the Centre for Rural and Northern Health Research-Laurentian

A notable example of this innovation and strength is the establishment of uniquely First Nations health authorities in two areas: the Sioux Lookout First Nations Health Authority (https://slfnha.com/) in Northwest Ontario; and the Weeneebayko Area Health Authority (https://www.waha.ca/) in Northeast Ontario. In addition to providing healthcare services, a partnership between the Sioux Lookout First Nations Health Authority and the local hospital, Sioux Lookout Meno Ya Win Heath Centre (http://www.slmhc.on.ca/), created the Anishinaabe Bimaadiziwin Research Program (https://slfnha.com/research/anishinaabe-bimaadiziwin-research-program) to establish a community-oriented research unit to improve health status and health services in the region.

Anishinaabe Bimaadiziwin Research Program

Working in Sioux Lookout and the surrounding First Nations, the Anishinaabe Bimaadiziwin Research Program initiates and collaborates on relevant clinical and community projects, as well as regional and cross-cultural research.

Goals:

- Assist communities and researchers to build strong and equitable partnerships on focused and common research interests
- Foster an environment of curiosity, inquiry and sharing
- Encourage research that is relevant, ethical, community-oriented and builds capacity
- Communicate with and share health research knowledge with communities and organizations

A perusal of a report summarizing 10 years of community-based research activities identifies many initiatives that have directly and positively influenced communities and community members in terms of cross-cultural care, management of infectious diseases, social determinants of health, maternal-child care and addiction medicine (Anishinaabe Bimaadiziwin 2017). For example, a novel study examined the effect of a community-based opioid agonist therapy and aftercare programs on the community itself (Kanate et al. 2017). One year after implementation there was a community-wide 61% decrease in police criminal charges, a 58% reduction in child protective cases and a 33% increase in school attendance. The effect of the OAT and aftercare programs was also evaluated in six First Nations communities, and found high retention rates of 72% after 18 months (Mamakwa et al. 2017). The authors of the summary report have perhaps said it best: “Despite often being under-resourced, these Community-based and culturally appropriate aftercare programs are very successful” (Anishinaabe Bimaadiziwin 2017: 15).

Cross-cultural care, management of infectious diseases, social determinants of health, maternal-child care and addition medicine are intertwined (Anishinaabe Bimaadiziwin 2017; Robinson et al. 2017), and the studies listed above have shown that progress in one area can lead to progress in another. These studies also demonstrate that programs must simultaneously address key issues in order to be successful. The success of these OAT and aftercare programs in rural and remote First Nations communities have led to a set of guidelines and recommendations for similar programs in rural areas (Robinson et al. 2017).

This is a clear example of a program developed in the rural north with application to other rural areas or low-resourced regions.

Cross-cultural care, mentioned above, is no small thing and exists within a broader context. The Calls for Justice in the 2019 report on the findings from the National Inquiry into Missing and Murdered Indigenous Women and Girls (https://www.mmiwg-ffada.ca/) echoes many of the Calls for Action in the Truth and Reconciliation Commission Final Report from 2015 (http://www.trc.ca/). Both reports highlight the responsibility of governments and healthcare providers to address inequities in health outcomes and health care with respect to Indigenous people. One important step in this journey to reconciliation is the establishment of training and support for developing culturally safe practices and cultural humility in health care. This is critical to address the pervasive impact of racism in health care experienced by Indigenous people in Canada (Allan and Smylie 2015). The Ontario Indigenous Cultural Safety Training program is an online

Ontario Indigenous Cultural Safety Program

ICS is a provincial program, offered Ontario-wide and administered by SOAHAC.

Anti-Indigenous racial discrimination and bias have profound negative impacts on the health and wellness of Indigenous communities in Ontario. The Ontario ICS Program is focused on supporting Indigenous Health transformation as part of the overall health and social service systems transformation underway in Ontario. The goal is to improve Indigenous healthcare experiences and outcomes by increasing respect and understanding of the unique history and current realities of Indigenous populations. We facilitate and promote transformative decolonizing, Indigenous specific anti-racist education using evidence informed and coordinated approaches and strategies. We also work in collaborative partnerships and support organizational change initiatives, seeking to improve awareness about how colonialism is embedded in services, and motivating people with influence to address anti-Indigenous racial discrimination.

There are a number of ways that the Program advances its mission:

- Core online training for health and social service professionals (see below)
- Continued online training modules (post core training)
- In-person workshops, training and meetings convened to support organizational and system level transformation
- Provincial and national knowledge exchange efforts
- Planning, monitoring, evaluation and research initiatives related to ICS
- Strategic, collaborative partnerships
- Partnership, coordination and promotion of a National ICS Webinar series (link)

From: https://soahac.on.ca/ics-training/

training program that was adapted from a successful program in British Columbia and is offered through the Southern Ontario Aboriginal Health Access Centre (https://soahac.on.ca/).

The evidence base on cultural safety training is mostly positive, but limited (Churchill et al. 2017), which speaks to the newness of this field of study. In their evidence brief, Churchill and colleagues (2017) note that there are some data showing a positive relationship among training, healthcare provider outcomes, organization outcomes and, ultimately, patient outcomes. Although results are not yet generalizable, it is easy to imagine how improved communication and understanding among healthcare providers, patients and healthcare administrators can translate into more efficient care and better outcomes for different populations who live in different regions of Ontario.

Francophone Programs

In 2016, there were 129,000 Francophones in Northern Ontario, with 7,100 in the Northwest, comprising 3% of the region's population and 122,000 in the Northeast, comprising 23% of the region's population (Ontario Ministry of Francophone Affairs 2019). Francophones tend to have poorer health status than non-Francophones (Bouchard et al. 2012) and access to healthcare services in French can be problematic (Gauthier et al. 2012; Timony et al. 2013).

Since 2012, CRaNHR researchers have been studying issues related to French-language health services (FLHS) for rural and Northern Ontario Francophones. Studies have sought to understand the availability of FLHS, the distribution of service providers, the experience of family physicians offering services in areas densely populated by Francophones and the experience of Francophone patients with receiving care in their language of choice.

CRaNHR's research has confirmed that there are a promising number of physicians that have identified French as a language of competence. In fact, nearly 16% of physicians reported the ability to offer French-language services. This initial finding was surprising given that only 4% of the Ontario population is Francophone (Gauthier et al. 2012). However, despite the perceived availability of French-language services by physicians, the reality is that many of these providers are located in areas where few Francophones reside. In Ontario, most French-speaking family physicians (55%) are located in communities where less than 10% of the population are Francophone, and only 14% of family physicians are located in communities that have a strong Francophone presence (where 25% or more of the population are Francophone) (Timony et al. 2013).

The maldistribution of French-speaking physicians in Ontario cannot be easily corrected, and does come with certain implications. Timony and colleagues (2018) found that French-speaking family physicians located in communities densely populated by Francophones worked more hours and saw more patients per week than their non-French-speaking colleagues. Our research with Francophone patients from across Northern Ontario confirmed that receiving services in the language of their choice fosters a more enjoyable experience (Jutras et al. in press). However, all rural and northern physicians have an opportunity to ensure quality services regardless of their ability to speak French or not. These studies have underlined the importance of preparing French-speaking family physicians for the extra time commitment related to offering French-language services, hiring

bilingual staff or having pamphlets and posters available in French and English. Additionally, these studies highlight the importance of the role that non-French-speaking physicians can play in support of their colleagues who offer French-language services (Gauthier et al. 2015; Timony et al. 2016).

Many lessons have been learned by delving deeper into this health human resource issue for rural and Northern Ontario Francophones. At first glance, outcomes may appear grim for French-speaking patients and hardships obvious for healthcare providers; however, a more recent CRaNHR study has shown that even small changes in communication behaviours can lead to improved patient satisfaction. As such, rural and Northern physicians are well positioned to make a positive impact on the health of Francophones in rural and urban Ontario.

The Future of Rural Health Services and Implications for Ontario

Greater geographic distance, fewer travel options, sparse populations and the patchiness of already-scarce resources will always pose a challenge for the delivery of health and medical services in rural areas and under-developed regions. With the current changes to Ontario's healthcare system, the time is right to continue development and implementation of innovative healthcare delivery programs. Pioneering programs have arisen from these areas and regions that have demonstrated ability to improve access to care. For example, NOSM's work to increase the medical and health workforce in historically underserved areas of Northern Ontario or OTN's efforts to transcend distance through the use of information and telecommunications technology to improve access to a broad suite of medical or healthcare services and expertise. These initiatives are particularly germane to other areas of Ontario because the population of Northern Ontario is older, which will be the situation in the rest of the province in a decade or two.

> *...resource constraints in rural and Northern Ontario typically require creative solutions and often require a critical evaluation of the needs or issues that may be defined differently in the general or urbanized population.*

In addition, the work of Indigenous and Francophone populations to adapt existing programs or to develop new programs that address their needs are often able to provide insights and innovations for all Ontarians, including other minority populations experiencing similar access challenges and marginalization. For instance, a disconnect between program objectives, process and outcomes may only become apparent when these relationships cannot be "translated" into different languages, cultures, genders, ages, locations, etc.

Phrased in another way, resource constraints in rural and Northern Ontario typically require creative solutions and often require a critical evaluation of the needs or issues that may be defined differently in the general or urbanized population. The success of alternatives in underserved areas

and with minority populations can inspire changes to the status quo in better-resourced or better-served areas.

It must be recognized that some rural-based healthcare delivery innovations have been less successful and so the challenges of geographic distance, restricted travel, low-population density and dispersed, scarce resources should not be underestimated. Problems of inequitable access to quality healthcare services remain. However, as the examples show, innovations in rural and northern healthcare delivery have emerged to address these challenges and improve equity. In addition, noteworthy innovations have occurred in other rural areas of Ontario, though in this Paper we have focused on those from Northern Ontario.

Rural regions and Northern Ontario can continue to be the test bed for programs evolving to meet emerging needs of an aging population, as well as demonstration sites for programs incorporating new knowledge or changing technology and infrastructure. Work to develop and evaluate these initiatives or to explore underlying reasons for geographic differences is ongoing, with the objective of developing effective, safe and economical programs to help improve well-being and quality of life of Ontarians living in rural areas and less-resourced regions.

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Northern Perspective: Innovative Healthcare Governance in Northern Ontario

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For anyone that has driven the highways in Northern Ontario, there can be vast stretches of road between one community and the next. For those outside of hubs such as Thunder Bay, Sioux Lookout or Sudbury, accessing a healthcare provider may mean navigating these expansive landscapes. Just 24% of patients in the Northwest and 28% in the Northeast report being able to see their primary care provider the same day or next day, compared to the Ontario average of 43% (HQO 2018, 23). There are likely a number of factors that contribute to this, including access to primary care providers. Just 91.5% of people in Northwest and Northeastern Ontario have a family doctor or other primary care provider, which are the lowest rates in the province and below provincial average of 94.1% (HQO 2017b).

In the paper by Hogenbirk et al., they analyze healthcare access in Ontario's northern regions. One particular point they make is that innovation can be the result of the relationship between poorer population health outcomes and a strong sense of community. These innovations are paramount for the health of northerners because as Hogenbirk et al. suggests, resource constraints in rural and northern areas require creative solutions and the critical evaluation of the needs and issues specific to the population that such solutions are intended to serve.

Examples of these creative and innovative health programs exist throughout the north. In addition to the examples provided by Hogenbirk et al., another example of an innovative community-specific approach is the Matawa Health Co-operative's inter-professional primary care health team, which aims to incorporate traditional healing and medicines to address the diverse health needs within the nine Matawa First Nation communities (Matawa First Nation n.d.).

However, local innovation isn't exclusive to program delivery. It is also needed in governance solutions to better reflect the needs and characteristics of sub-regional populations. For example, one way to build innovation at a local level could be to encourage municipalities to play a greater role in the governance, planning and delivery of health services. In Ontario, local municipalities and District Social Service Administration Boards have the responsibility to co-fund and deliver programs for public health, long-term care and paramedic services in conjunction with the Local Health Integration Networks (LHINS) (AMO 2019, 15). Municipalities also contribute considerably to capital investments for hospitals and provide incentives for physician recruitment (AMO 2019, 5). In fact, in 2017, municipal governments in Ontario contributed $2.1 billion to health costs, an increase of 38%

over the last eight years (AMO 2019, 3). However, Ontario municipal governments presently have limited ways to provide input on program design (AMO 2019, 4). Because of the growing involvement of municipalities in public health and healthcare systems, the AMO states that "municipal governments need to participate fully in health policy and planning processes as equal partners, not as mere stakeholders" (AMO 2019, 5). Increasingly, municipalities are stepping in "to fill gaps in provincial services at the community level" and as such, having their voice at the table can be another tool to help ensure health policy (and subsequently programs) are targeted (AMO 2019, 5).

In addition to this Ontario example, northerners ought to remember that we don't have to find all the solutions ourselves. Looking to successful cases of creative local healthcare governance in other parts of Canada, or even internationally, can lead to new ways of thinking and positively impact healthcare users. According to André Picard, a long-time healthcare journalist, "we've solved every single problem in our [Canadian] health system at least 10 times on a small scale. Our biggest single problem is not scaling up our successes" (CBC Radio 2017).

Take the Community Health Boards (CHB) in Nova Scotia, for example. There are 37 CHBs across Nova Scotia that are comprised of groups of community volunteers who gather ideas and share information about how to improve and promote health and wellness at the community level (Nova Scotia Health Authority n.d.). In addition to developing partnerships with local community groups, CHBs award Wellness Fund grants to community projects that focus on initiatives identified in their community health plans (Nova Scotia Health Authority n.d.). Creating the health plans, which guide the work of the CHBs, is an ongoing activity that gathers information from the community on factors affecting health and wellness (Nova Scotia Health Authority n.d.). Generally speaking, local health leaders may be better positioned to make the necessary holistic health decisions than those in government ministries (Everett 2019, 14). As well, increasing citizen participation in health governance shifts the focus to a patient-centered approach which could improve the quality of care and address existing problems (Everett 2019, 17).

Ontario is following with similar frameworks. In 2016, the province released its first Patient Engagement Framework to "guide people in planning for implementing and evaluating patient engagement activities" (HQO 2017a, 3). This framework recommends that patient input be included in order to demonstrate accountability, promote transparency and respond to patient needs (HQO 2017a, 13). Examples of these efforts can include appointing patient representatives to hiring committees and hosting public meetings to include patient input in new strategic plans (HQO 2017a, 13).

Despite the need to work with local actors to generate context-specific solutions, most municipalities in the north are "too small to provide a critical mass and economies of scale for many services" (Everett 2019, 14). To address this, the Northwest LHIN and the Ministry of Health and Long Term Care have pioneered an innovative sub-regional planning model, called Local Health Hubs (Everett 2019, 14). The Hubs are based on population demographics, economic circumstances and cultural landscapes, and are meant to provide local communities with a wide range of health services

(Everett 2019, 14). Local Health Hubs could improve client access, generate a patient-centered approach and support stronger community links (Whaley 2013, 6).

Similarly, Rural Health Hubs, an initiative of the Multi-Sector Rural Health Hub Advisory Committee, are meant to equip service providers in particular with interdisciplinary partnerships in order "to improve the coordination and effectiveness of care for a defined population and/or geographic area" (Multi-Sector Rural Health Hub Advisory Committee 2015). For small, northern communities without the critical mass for service delivery, these creative collaborations within and across municipalities and disciplines are necessary for the effective delivery of health services that meet population needs.

As highlighted by Hogenbirk et al., northern health systems must navigate an expansive geography with low-population density while simultaneously meeting the needs of Francophones and Indigenous peoples. Addressing these complexities is no easy task. However, the strong sense of community mentioned by Hogenbirk et al. is certainly a strength of Ontario's north and should be integrated into the health system. Innovative community-based solutions in both healthcare programs and governance could make for a healthier north.

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