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Extending the Reach of Medical Care for Remote First Nations Communities: Beyond Technology

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As British Columbia's life expectancy (81.1 years) continues to increase for the majority of the population, historically, it has been significantly lower (74.7 years) for First Nations, Metis and Inuit populations.¹ Suicide, traumatic injuries, infectious diseases such as tuberculosis, complications of diabetes, and heart disease are general culprits.² Despite obvious needs in terms of primary and specialty care, recruitment and retention of physicians in remote communities remain a systemic challenge. While the life expectancy differential cannot be accounted for solely by the difference in healthcare providers' distribution, the physician-to-patient ratio is an internationally recognized index of general health. Moreover, the literature

recognizing the effect of the ratio of primary care providers to population as a main contributor to general population health is abundant.^{3,4}

The Aboriginal population has been one of the fastest growing in BC, increasing by 15.3% between the 2001 and 2006 censuses, while the non-Aboriginal population increased by 4.9%. The total Aboriginal population in BC was 196,075 as of 2006.⁵

However, individual communities are small (50-600 people) and widely spread throughout a vast territory. Getting to the local clinic, laboratory or X-ray facility often means travelling by road, air, or water for many hours. Issues such as social isolation, substance abuse, violence, poor compliance with medications, and medical investigations are further significant barriers to the implementation of a reliable, consistent primary

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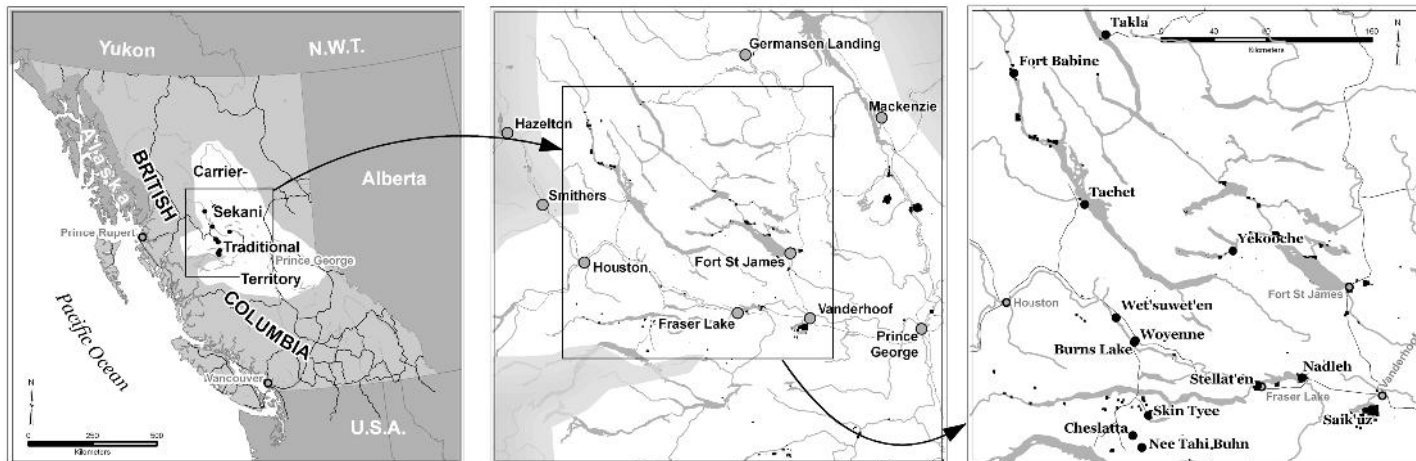


Figure 1. Aboriginal communities we serve in the Northern Interior Health Service Delivery Area of British Columbia.⁷

care service.⁶ Moreover, most physicians do not fully realize the extent of cultural differences and collective traumatic experiences shared by this population and may not always offer consistent, culturally sensitive care. Unfortunately, this has led to an erosion of trust over decades and cultivated a feeling of isolation in these communities.

In brief, challenges are plentiful, but the situation is not hopeless. Creative solutions aimed at addressing the aforementioned gaps in healthcare are evolving. Throughout the world, innovative programs have been pioneered to provide better access to healthcare services with a reduction in total expenditures.

So imagine this: You are a family physician responsible for primary care of 1500 patients. Sound easy? They live 1000 kilometres from your home, and they are distributed over a 1000-square-kilometre area without reliable road access (Figure 1).

And yet, as their primary care physician, you are able to care for them on a regular and semi-urgent basis, any day of the week.

How? By thinking differently. This new paradigm requires a fundamental reorganization of healthcare delivery. Physicians today rarely work in isolation. It is expected that nurses, physiotherapists, colleagues, specialists, and ancillary staff all support and share clinical work to enhance a patient's care. However, this model is expensive and not always economically suited to sparsely populated, isolated areas. By realigning the traditional physician-centred model, a community that is too small to sustain a full-time physician practice on its own may be big enough to warrant 24/7 healthcare worker presence. And, even if it is too small and isolated to sustain a nurse, a Community Health Representative can still be designated and trained. First pioneered in Alaska, Community Health Representatives are community members who are trained to recognize emergencies, are competent with medical jargon, and can perform basic first aid.

How then can a healthcare provider, such as a primary care physician or nurse practitioner, reach out to patients and healthcare staff located in a variety of remote settings separated by such large geographical distances? This new paradigm, alluded to above, harnesses the power of technology to support the building of connections and relationships. Videoconferencing, high-grade

audio and high-speed connections are not only useful for Skype; they are actively used as an adjunct to on-the-ground healthcare services. Welcome to the new world of Telehealth. Using secure connections through satellite, microwave signals, or landline fibre, remote communities today can have access to healthcare provider (physician, nurse practitioner, nurse, etc.) expertise 24

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hours a day, 7 days a week. Amazingly, urgent and non-urgent healthcare needs can now be supported.

This new model creates the following scenario: when a nurse feels they require assistance in managing a patient, they can call a physician or nurse practitioner to connect directly to the remote site via Telehealth technology. The physician and nurse practitioner are knowledgeable about the limitations and strengths of the local health centre and can, therefore, give recommendations that are contextually appropriate. Moreover, patients have access to healthcare providers with whom they are familiar and have developed relationships. In this model of care, virtual and face-to-face interactions are complementary to each other. Monthly visitations to these remote communities by the physician and nurse practitioner further strengthen the relationships that the virtual interactions continue to nurture. Given the cultural uniqueness of the population in question and the difficulties First Nations communities have faced, this trust-enhancing feature is an often-overlooked benefit of Telehealth.

Modern Telehealth technology now allows for the

examination of a patient that not too long ago seemed impossible, or at best farfetched. The direct visualization and listening through high definition cameras and stethoscopes in real-time, or as saved files, is now common. The saving and sending of digital images or sounds over a secure connection is known as “store & forward” in the Telehealth lexicon. This model utilizes real-time Telehealth technology over a secure connection. Collaborating on the early management of a critically ill patient (e.g. sepsis, myocardial infarction, trauma), and helping to facilitate timely transfer to a larger medical centre are not uncommon uses of Telehealth technology in the settings this model supports. As a value added piece, real time connection over Telehealth fosters professional support where once there was little. Helping a nurse suture a complex laceration, perform an incision, and drain an abscess for the first time are examples of professional collaboration that the technology supports. Timely, responsive care has led to more appropriate management within the communities and a reduction in costly patient transfers.


On the less urgent side of the healthcare spectrum lies the world of chronic disease—a world that First Nations people experience far too often. Arguably, this is where Telehealth may prove to have its greatest benefit. Primary care providers are often confronted with uncertain diagnoses or questions about care options for their patients. Specialist help is many hours away by road and appointments are difficult, not to mention risky, to get to. So how can technology support a new specialist experience for the patient and the primary care providers? Here is an example.

Scenario: As a primary care provider you are challenged by a patient that seems to fit into the rheumatologic spectrum of medical problems. However, you find yourself in need of a specialist colleague to help make the formal diagnosis and possibly recommend best treatment options. Welcome to the collaborating general internist. Every three months, she comes along with the primary care team and provides face-to-face consultations for a variety of internal medicine problems. She can facilitate necessary tests, liaise with subspecialty care, and reduce the number of trips needed outside the community by the patient. As a bonus, she is available for consultation and follow-up every working day, via Telehealth. In contemporary medical vernacular, “Shared Care” can occur in this remote First Nations community. The primary care provider, consultant and patient collaborate, in real time, to work out solutions for the patient. This virtual triangle consisting of the medical providers and the patient leads to improved relationships, trust, compliance and hope. To date, other specialties participating in virtual consults for the communities we support have included general and thoracic surgery, infectious disease, nephrology, dermatology, mental health and addictions—with interest still growing.

Telehealth is not medical alchemy. Rather, it is another arrow in a quiver bursting with options. In the right hands it can transcend insurmountable geographical distances, forge relationships between healthcare providers and patients, and augment on-the-ground services. Telehealth does not replace face-to-face contact; it enhances it. It ensures continuity, closer follow-up, and consistency. Studies have shown that it enhances patients’ and providers’ satisfaction, and others have found

significant medium- and long-term reductions in morbidity and cost, in addition to increased productivity (e.g. no days lost for travel or spent waiting in the waiting room).^{8,9} So why are we not doing more of this?

Many will recall the story of the videoconferencing unit that went out to help a rural or remote community. Unfortunately, more often than not, the videoconferencing unit suffered an ignominious end and was laid to rest in a dark closet or basement. At the very best, it was brought back to life to facilitate administrative meetings. It was never normalized into everyday practice, like a telephone. Hence, the videoconferencing unit is often seen as a clunky, daunting, often unreliable piece of technology that is best left in its dormant state.

Transformative change in medicine is not easy. Change theory tells us that to normalize such a revolutionary way of delivering care, technology is the least of our concerns. We need to convince patients, providers, health authorities, academic institutions, and government that it works, it is safe, it is cost-effective, and it is sustainable. We need to build trust between all these players that this technology is a positive step into the future. In other words, it’s all up to us. We have some work to do. We are hopeful that this success story stirs interest and creates intrigue in the hearts of the reader and medical community at large. Medicine is in great need of transformation and technology is here to help if we will let it. 

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