

Enhancing access to care in northern rural communities via telehealth

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ABSTRACT

The cost of providing health care in northern Canada is higher than the rest of Canada. Telehealth has the potential to reduce health care expenditures. Yet this is still underutilised in Canada and globally. This paper describes the services provided through telehealth in some northern regions of Canada. It provides recommendations on the requirements for setting up real presence telehealth and how utilisation can be enhanced. Telehealth offers potential benefits for health outcomes by increasing access to healthcare, and reducing expenditures.

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Introduction

Access to care is a determinant of health and remains one of the major reasons for the health care gap between Indigenous and non-Indigenous populations in Canada [1]. A recent report indicated that the cost for health care per capita in northern Canada, with its largely Indigenous population, is double the cost than for the rest of Canada [2]. Health expenditures are increasing across the country, but some of the most pronounced increases can be seen in the northern territories [2]. Health system decision makers in Nunavut expressed concern about the sustainability of expenditures as upwards of 40% of the territory's annual health budget is spent on medical travel and accommodation [3]. Telehealth has the potential to dramatically reduce health care expenditure costs and increase access to specialty services for rural and remote communities in Canada and globally. Telehealth can facilitate the health service delivery using a secure electronic network that permits communication between providers via videoconferencing, and supports diagnostic imaging and data transfer. For patients, telehealth makes it possible to receive care without having to travel long distances. It also reduces patient and system expenses relating to travel and accommodation, and reduces time away from home and work. It also increases the timeliness of care access.

Opportunities for improvement

A review of the models of care in Australia suggested that telehealth has the potential to address many of the key challenges to providing health care for its widely dispersed

population in its large geographic area [4]. A study in Nunavut, Canada, reported that in 50% of telehealth patient care sessions, either a patient or a professional or both would have had to travel had telehealth not been used [5]. An unpublished 2017 survey by R. Jong in Newfoundland and Labrador, Canada, found that physician users of telemedicine consistently report that telehealth resulted in improved patient care, reduced transfers, and collaboration and support for the patients and remote health providers. There was a general consensus amongst physicians that telemedicine was still underutilised in much of the province. This matches our clinical experience in both Labrador and Saskatchewan: most physicians are familiar with telemedicine, but it is not readily chosen as a health care delivery method for provision of acute care in remote communities. Previous limitations from unreliable and unsecure broad bandwidth are no longer an issue in most regions of Canada. Unfamiliarity with telehealth and reluctance to change mode of practice may be the current reasons for the underutilisation of telehealth. The opportunity for greater utilisation of telehealth exists in Canada and globally [4].

Current uses in northern, rural and remote communities

A recent pilot study looking at triaging paediatric acute care transports in the province of Saskatchewan revealed that direct assessment and triaging with remote presence robotic technology significantly decreased the number of respiratory patients requiring transport out of their home

communities [6]. Remote presence robotic technology has the potential for significant cost-benefit from a reduction in medical transport expenses. Similarly, implementation of remote presence robotic technology in Labrador was associated with a 60% reduction in medical transportation and cost savings from reduced transport and accommodations [7]. Other telehealth solutions such as tele-robotic ultrasonography are currently being piloted in the Province of Saskatchewan [8]. A 2004 study showed that videoconferencing was preferred to visiting clinics and email, by family physicians and patients, as a method for delivering rheumatology services to rural/northern communities [9]. It was cost-effective and allowed for knowledge transfer between the rheumatologist and the referring physicians.

The provision of mental health assessments for patients in a remote community in Labrador, Canada, by videoconferencing was shown to save money without compromising patient care [10]. Telepsychiatry is now routine in Labrador. Currently, most of child psychiatry services for Labrador are provided via telehealth and only clients that require admission are sent to the provincial children's acute care hospital. Acceptance of this mode of care by children and families is high provided there is a reliable broadband that offers clear picture and sound, and a secure room that permits no interruption during the assessment. Despite the limitation with the time lag associated with satellite transmission, mental health providers in Nunavut are continuing to assess case-based educational seminars and consults with psychiatrists Toronto [11].

It has been demonstrated that it is possible to save lives by providing oversight of advanced life support through videoconferencing. With the right set-up of the equipment in the room and training, telehealth can lead to successful resuscitation in remote communities [12]. This is the current normal service for critically ill patients living in remote communities in Labrador.

Other services that are being provided by telehealth in rural Canada are:

- Preoperative assessments and postoperative care for surgery;
- Management of fractures and dislocations;
- Assistance with procedures and surgeries via more experienced colleagues;
- Daily remote haemodialysis rounds;
- Tele-oncology;
- Point of care ultrasound with the aid of an untrained person and led remotely via video by an experienced health provider;
- Speech pathology;
- Dietary consult;

- Physiotherapy consult;
- Professional development; and
- Supervising learners in remote communities.

Strategy to enhance telehealth

For telehealth to be successfully adopted, training is best provided while the health practitioner is still in training and more amenable to learning [13]. At present, health providers that provide telehealth are in the later stage of their careers [14]. Changes for busy and older health providers are more challenging. Despite this challenge, once the skill is mastered, telehealth offers more precise decisions for diagnosis and management than a phone consult [15,16]. In the practice setting, telehealth equipment should be easily accessible. For emergencies, it should be in the emergency room and set-up so that it can be logged on to immediately for stat calls. Users will choose a path that is more expeditious. With current technologies, telehealth can be conducted through laptop computers, tablets and mobile smart phones. The advent of new technologies such as remote presence robotics and the development of sensor technology will facilitate the implementation of telehealth solutions to remote northern communities. Telehealth networks can be secured through transmission within the intranet or by encryption through public internet or cellular networks. The minimum internet bandwidth for video is 256kb/sec, but it must be reliable and secure 3-G Wi-Fi service can also support video [12]. Nunavut is the only current northern territory in Canada that has not reached the capacity to provide reliable broad internet bandwidth or 3-G Wi-Fi. It remains a high priority the governments of Nunavut and Canada with promise from the federal government for all 25 Nunavut communities to have faster internet by 2019 [17].

Conclusion

Telehealth can have a positive impact on health care delivery in northern Canada. It creates opportunities for cost-effective and accessible care closer to home. It provides timely care, can save lives and reduce cost of health care through reducing the need for travel.

Disclosure statement

No potential conflict of interest was reported by the authors.

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