The Broader Benefits: Telehealth as an Instrument to Improve Human Security in Remote and Northern Canada

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ABSTRACT
As of 2016, Canada ranks 9th in the world on the Human Development Index. This relatively good standing, however, is not consistent throughout the country. The provision of ‘human security’, as outlined in the United Nation Development Program’s (UNDP) 1994 human development report, is arguably much stronger in urban centres than in Canada’s remote and rural north. Looking beyond the health benefits, this paper assesses how the implementation of telehealth in Canada’s northern and remote communities led to an increase in other areas of human security. Specifically, this paper argues that the presence of telehealth services in remote communities indirectly impacts an individual’s economic, environmental and cultural security. From an economic perspective, telehealth reduces opportunity cost for the individual and stimulates economic growth in the local community. Environmental security stems from a reduction in emissions associated with healthcare in addition to the use of telehealth information and communication technologies (ICTs) to educate and assist in emergency environmental situations. Cultural security is a resulting feature of telehealth’s flexibility to accommodate particular cultural needs. Largely, this paper highlights the direct proportionality between telehealth and human security. It is hoped that, in recognizing this relationship, federal, provincial, territorial and local governments will work together to fund, support and strengthen telehealth practices. Further, Canada cannot claim to be a champion of human security abroad if there are holes within its domestic practice. It is telehealth’s broader benefits that make it a clear policy choice to improve welfare and contribute wholly to the often forgotten underdeveloped regions within developed countries.

I. INTRODUCTION
The use of nation states as units of analysis when assessing social policy neglects internal inequalities and regional variations within a state. Canada, for example, currently ranks 9th on the Human Development Index. This relatively good standing, however, is not consistent throughout the country. The remoteness of Canada’s North and the related consequences of inaccessibility – lack of infrastructure, health services and affordable food - challenge the notion that Canadians enjoy a high development standard and basic human security.

Human security is frequently understood in accordance with the United Nations Development Program’s (UNDP) 1994 human development report. It outlines human security as “safety from such chronic threats as hunger, disease and repression. And second, it means protection from sudden and hurtful disruptions in the patterns of daily life – whether in homes, in jobs or in communities.” In a Canadian context, Lloyd Axworthy elaborated on this theory by outlining that human security could be equated to “security against economic privation, an acceptable quality of life, and a guarantee of fundamental human rights.” The broad definition has sparked criticism over the validity and usefulness

of the concept of human security. By encompassing any sort of disruption, the term becomes an obsolete measure in attempting to categorize or describe a given situation. Debate remains about whether it is more beneficial to narrow or broaden the definition. For the purposes of this study, however, human security will be understood in, possibly, its most ambitious form as originally outlined by the UNDP.

Resource scarcity in Canada’s north and within the Canadian federal government induces the difficult challenge of prioritizing the country’s security needs when prescribing policy in isolated regions. Thankfully, technological progress, particularly in the field of communications has increased the speed and delivery of information and services in Canada’s north. Such progress has helped induce certain policy choices. Telehealth, for example, has proven to be a beneficial alternative for delivering health care services to remote areas. The World Health Organization describes telehealth as follows:

The delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities. ⁴

Specifically, within the literature, telehealth has been cited as a practice that has a significant impact on removing access barriers to health. ⁵ Further, it is able to do so while reducing the financial burden on the healthcare system. Its practicality and ease of implementation in a, arguably, technology-obsessed global society has resulted in “…all but 31 (13 per cent) of the world’s 238 United Nations recognized countries” engaging in e-health related activities. ⁶ To be explicit, this includes developed and developing countries alike.

Telehealth became a popular policy in Canada at the end of the 20th century and continues in its use and evolution in both urban and rural contexts. It was estimated that in 2010, rural Canadians had 94,000 telehealth consults thus dramatically reducing both the relative emotional and financial costs of travelling great distances for health care. ⁷ The same empirical study on the cost-benefit of telehealth revealed that the existence of telehealth networks “had[d] resulted in annual [Canadian] health system cost avoidance of approximately $55 million and personal travel cost savings of $70 million.” ⁸

Studies related to telehealth and its delivery to remote areas, frequently highlight persisting barriers: lack of infrastructure, privacy concerns, high employee turnover, funding, time, coordination

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⁵ Ibid.
⁸ Ibid., 9.
amongst various levels of government and resistance to change. These difficulties are manifested in numerous developed nations that, like Canada, have large geographical areas. While much of the existing literature on telehealth centers on case studies in Australia and the United States; however, in recent years, a greater focus has been given to telehealth practices in the developing world.

Regardless of the regional focus, the studies consistently highlight the health benefits provided by telehealth. These include, but are not limited to, access to specialists, education on a variety of health topics and empowerment. The latter concept is a result of telehealth’s ability to educate and advise individuals, yet ultimately allow those using the service to make health related decisions on their own accord. More specifically, telehealth can help eliminate three basic threats to security: susceptibility to epidemics, lack of access to healthcare services, and insufficient access to healthcare personnel. What fails to be addressed, however, are the greater ripple effects that telehealth has on a remote community. Besides the well documented health benefits of telemedicine, this paper explores how the implementation of telehealth in Canada’s northern and remote communities may result in an increase in other areas of human security.

The simple classification of telehealth exclusively as a health policy neglects its broader societal impacts. Specifically, this paper argues that the existence of telehealth services in remote communities indirectly impacts an individual’s economic, environmental and cultural security. As aforementioned, these elements of security are all components of the UNDP’s definition of human security. From an economic perspective, telehealth reduces the opportunity cost for the individuals and stimulates economic growth in the local community. Telehealth encourages job creation at the local level with respect to physician recruitment and retention, initial set up, lab work, and local pharmacy revenues.

Environmental security stems from a reduction in greenhouse gas emissions associated with healthcare by using telehealth information and communication technologies (ICTs) to provide healthcare advice, diagnose, and educate populations without having healthcare providers, or patients, travel great distances. Travel reduction helps to deter the degradation of the natural environment. Beyond healthcare, ICTs serve a secondary purpose of monitoring environmental change, educating populations on best environmental practices, and assisting in emergency situations following environmental disasters. These concepts, however, are not pointedly explored in existing literature and, thus, an exploration on how they promote environmental security is merited. Lastly, cultural security is a

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10 Ibid.
resulting feature of telehealth’s flexibility to accommodate particular cultural needs. By expanding the area of influence and highlighting these greater consequences, it is hoped that this paper will better showcase how telehealth and human security are directly proportional. Relying on data collected from studies on telemedicine in northern and remote communities in various countries, this study will look at the link between health, the economy, the environment and local culture. Through the three lenses, it is hoped that the notion of telehealth as an instrument to increase human security will become more easily perceived.

II. THE ECONOMIC BENEFITS OF TELEHEALTH

An increase in telehealth access is a contributing factor to an increase in economic status inasmuch as a healthy workforce is perceived as being more productive. In fact, from a global lens, the relationship between population wellbeing and economic performance is perceived as directly proportional. As Richard E. Scott and Maurice Mars observe, “[c]ountries differ substantially in their levels of health and well-being, but in general terms those countries with higher well-being are those that are more economically developed with higher personal income leading to better health.” This statement, however, neglects the fact that, despite a country’s ability to boast a high average income, the cost of accessing healthcare varies with the region. Additionally, this measure is not reflective of the income earned by remote populations. Both income and the cost of accessing healthcare affect health outcomes regionally. Studies on telehealth in remote areas tend to fixate on the specific cost-benefits that result. In his remote community centric study looking at rural hospitals in the United States, Brian A. Whitacre develops a framework that splits the economic benefits in a local community into four categories: “1) hospital cost savings from outsourcing telemedicine procedures; 2) transportation savings to center patients; 3) missed work income savings to center patients; 4) lab/pharmacy work performed locally.”

The opportunity costs that telemedicine presents for healthcare systems are very visible throughout the literature. For example, by establishing a paediatric burn telehealth service in 2005, the state of Western Australia saved an annual average of $1.89 million AUD. Similarly, the Brazilian state of Minas Gerais in 2005 invested $9 million USD in a telehealth system for its 19 million residents. This initiative yielded a cost savings of $20.08 million USD within a period of 5 years. In the Canadian province of Ontario, a six month study between October 2008 and March 2009 on healthcare related travel found that the introduction of a telehealth system lead to a decrease of $192,665.88 CAD in

14 Scott and Mars, 25.
17 Scott and Mars, 29.
claims submitted to the Northern Health Travel Grant.\(^{18}\) The Northern Health Travel Grant provides monetary compensation from the government of Ontario, for long-distance travel to access medical services that are not available locally. The grant is restricted to those who travel over 100 kilometers, access only the nearest health care facility, and accommodation allowances are only provided for one evening.\(^{19}\) The grant does not cover trips in ambulances.\(^{20}\) The study in Ontario sampled 282 residents who had received teleconsultations in lieu of traveling to receive their healthcare. Given the restrictions on the Northern Health Travel Grant, the total money saved from reduced patient travel is likely larger than the figure presented. Further, from a remote hospital perspective, telehealth simply makes economic sense. As Robert J. Bulik indicates, productivity increases when a physician is able to remain and work in one location rather than spend a large portion of time travelling between sites.\(^{21}\)

While the evidence of savings is plentiful, there is an absence of research indicating where such funds are being redirected. There is also a lack of literature on the costs associated with the initial infrastructure, including access to equipment as well as the set-up costs associated with implementing a telehealth system. Such expenses, while context specific, can be presumed to be quite sizeable for northern, fly-in communities.\(^{22}\) This is particularly true in terms of introducing video-conferencing or local scanning equipment as opposed to mobile telehealth initiatives that work primarily through cellphones that residents may already own. The set-up cost is additionally compounded by the lack of good quality telecommunications infrastructure in the North.\(^{23}\) The need for preliminary cost assessment is important and consistent with findings, albeit limited, that depending on the specific nature of the healthcare (primary, emergent, surgical), telehealth is not always the most cost-effective nor the best manner to improve effectiveness of health care delivery.\(^{24}\) It is for this reason that it is important to give due consideration to the context within which telehealth was studies, when interpreting data.

When assessing telehealth’s contribution to human security, the focus must be redirected at the individual level. Building off Whitacre’s framework, the argument stands that telehealth contributes to human security by increasing individual economic prosperity. Various studies reveal that the correlation is best demonstrated by providing individuals with greater profits by reducing their travel costs and

\[\text{Caterina Masino et al., “The Impact of Telemedicine on Greenhouse Gas Emissions at an Academic Health Science Center in Canada,” Telemedicine and e-Health 16, no. 9 (November 2010): 4.}\]


\[\text{Ibid.}\]


through job creation and retention in the local community.\textsuperscript{25} They are examined in detail below.

If one of the facets of human security is understood as economic security, then the reduction of out-of-pocket travel expenses can be a positive factor in bolstering human security. A qualitative study of patient and family experience with video telehealth in rural northwestern Ontario found three key categories of benefits to the patients: 1) lessening the burden; 2) maximizing supports; and 3) tailoring specific e-health systems to enhance patient and family needs.\textsuperscript{26} An empirical study from the United States found that the cost associated with travel for 24 rural communities ranged from $5,987 to $95,388 annually per community.\textsuperscript{27} Further, missed work income savings were calculated at ranging from $3,032 to $68,269.\textsuperscript{28} These costs reflect the opportunity cost of implementing a telehealth system. Additionally, this study mirrors the findings in an Australian study on a rural telehealth system focused on mental health emergencies. As a result of the mental health video assessments provided, there was a significant decrease in the number of rural patients experiencing a mental health emergency that were automatically admitted to an isolated institution. This had traditionally been the practice. From an economic perspective, the result was a drastic reduction in travel costs and time spent away from work for the individual in question.\textsuperscript{29} The impact of lessening the economic burden on those living in northern Canada can clearly be understood when one appreciates that the Qikiqtani General Hospital in Nunavut services those living within a range of one million square kilometers.\textsuperscript{30} Though travel grants do exist, they are time intensive to complete and do not necessarily cover the trip’s expenditures in its entirety. As noted by Sevean et al., telehealth is thus a favourable savings-inducing instrument for rural Canadians.\textsuperscript{31}

A second component of telehealth’s relationship to human security - reflected as improvement in economic status - is its ability to create jobs and keep money in the local economy. The global telemedicine market is expected to reach $13.8 billion by 2018.\textsuperscript{32} In a study of 24 remote regions in the Midwest United States, Whitacre found that the most direct way to see economic investment in the local economy is through an increase in lab or pharmacy work that is performed locally.\textsuperscript{33} His argument, however, is not particularly convincing given that it is heavily influenced by the number of visits per year.

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\textsuperscript{26} Lessening the burden includes the costs of travel, accommodations, lost wages, lost time and physical limitations whereas maximizing supports includes access to family, friends, local care providers and familiar home environments. Pat Sevean et al., “Patients and families experiences with video telehealth in rural/remote communities in Northern Canada,” \textit{Journal of Clinical Nursing} 18, (2008): 2573.
\textsuperscript{27} Whitacre, 177.
\textsuperscript{28} Ibid., 178.
\textsuperscript{31} Sevean et al., 2578.
\textsuperscript{32} Scott and Mars, 28.
\textsuperscript{33} Whitacre, 179.
lab work required per community is quite low. For example, of the Northwest Territories’ 33 established communities, for example, all are comprised of less than 4,000 people except Yellowknife, which has a population of a little over 20,000. Moreover, it is easier to understand the correlation between travel and the local economy, when one considers that a reduction of travel can results in less local business being lost to alternate communities.

Much debate remains about the ability of telehealth to entice physicians and healthcare workers to live in remote communities. A study conducted in remote Quebec yielded some interesting results that better captures the Canadian context. In assessing the retention and recruitment of physicians, Gagnon, et. al. observed that seven influential factors contribute to decisions to pursue careers in smaller remote regions. These factors include: individual, family, community lifestyle, professional, organizational, educational and economic. They assert that “...telehealth is likely to have an impact on a set of individual, professional, organization and educational factors.” While they express that telehealth does not lead to a direct increase in medical human resources, it does have a positive impact on occupational well-being. Occupational well-being is defined the quality of life experienced at work and is influenced by a number of factors, including the ease and efficiency of the technology associated with the delivery of telehealth. An increase in occupational well-being, in turn, translates to a higher recruitment and retention rate of physicians. These findings are consistent with the results of a study conducted in rural regions of Mali where it was found that use of technology alone did not strongly affect retention. The study also reiterated the need for human resource training for technology because “…familiarity of health professionals with ICT tools and [telehealth] application is one of the factors that help to achieve development and sustainability of [telehealth] projects.”

Telehealth proves to be a promising factor for the occupational well-being and, ultimately, the recruitment and retention of physicians when combined with proper training. Telehealth, however, is not a substantial fix to remote workforce shortages. These findings are consistent with Whitacre’s observation that, specifically in hospital settings, the introduction of a telehealth system does not result

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37 Ibid., 2.
38 Individual factors include: native of the region and personality. Professional factors include: occupational well-being, multiskill practice, technical support center, team reputation, specialist availability and integration to the team. Organizational factors include: critical mass and image of the center. Educational factors include: training in the region, continuing medical education and effective education. Ibid., 4.
39 Ibid., 8.
41 Ibid., 6.
42 Ibid., 8.
in “telemedicine only jobs.” That is, it is not typically observed that jobs are created specifically as a result of the implementation of telehealth services. The exception to this is outlined in Chris J. Rhoades’ study of telehealth in the state of Pennsylvania where she argues that job creation and entrepreneurship is only encouraged if technological infrastructure is in place at the onset of the introduction of a new telehealth system. Notwithstanding local contexts whereby a lab or pharmacy would see an increase in work, it can be concluded that on average, a general relationship between telehealth and job creation is negligible. The availability of telehealth is a contributing factor to retention and recruitment of physicians, but is not a direct one.

III. ENVIRONMENTAL BENEFITS AND TELEHEALTH

The benefits associated with reduced travel to access healthcare are not limited entirely to individuals. Indeed, it is implicit that there are environmental benefits when reducing the travel necessary to maintain a minimal level of health and wellbeing. For example, it is estimated that in the United States, 8 per cent of the country’s total greenhouse gas emissions and 7 per cent of total carbon dioxide emissions come from the healthcare sector. It is estimated to comprise 3 per cent of the United Kingdom’s carbon dioxide emissions. In Canada, 2008 figures suggest that health care services, except hospitals, are responsible for 3.34 per cent of Canada’s total greenhouse gas emissions. This number is drastically lower than the aforementioned countries, as transport emissions associate with healthcare are not included in the calculation. While it is easy to see the environmental impact when reducing travel emissions for patients, Wootton, Tait and Croft state that there are in fact three sources of carbon emissions in the healthcare system. In addition to emissions resulting from patient travel, there are the emissions resulting from the goods and services consumed by the health system and the emissions associated with buildings to be accounted for. Within a northern Canadian context, the building emissions would likely be higher than average, given the average annual temperature of the region in addition to the darkness experienced during the winter. While there is a lack of detailed information regarding the specific budgets of hospital operations in the north, one study did find “Nunavut’s annual health care costs at $13,152 per person, more than double the Canadian average of $5,988 per person.” It is apt to perceive this increase as a consequence of the remoteness of Canada’s north.

48 “Nunavut’s per capita health costs double the Canadian average,” Nunatsiaq Online, last modified November 5, 2013, accessed December 9, 2016,
Though studies have considered the calculation of carbon emissions due to health related travel, the results are extremely contextual given the geography and scope of the area studied. For example, in Australia, a study revealed that within a year, the 1553 residents of King Island traveled a total of 346,573 kilometers and generated an estimated total of 134.64 tonnes of carbon dioxide. The generated emissions, however, are likely higher than other remote regions as the locale analyzed was an island; therefore all patients were required to fly to the mainland to seek medical treatment. Similar circumstances are witnessed in Canada’s north, as many communities are not connected via highway or rail. A Canadian study, conducted over 6 months between the 88 telemedicine sites across Ontario, Canada’s most populous province, revealed that the total travel distance avoided was 757,234 kilometers which equated to 185,159 kg of greenhouse gas emissions being avoided. In addition, the study also looked at the emissions associated with videoconferencing. The 840 teleconsultations, conducted in the same time period, resulted in the production of 42 kg of carbon emissions. This study was limited, however since it was unable to calculate for rail or air travel. The impact of air travel is particularly important given that it was found that approximately 22 per cent of all air ambulance transportation was unnecessary or over triaged. This number is derived from a study that looked at remote community transfers to the Port McNeil hospital in British Columbia but is, as the authors describe, relatively standard for remote regions. Emergency telehealth services can reduce the number of unnecessary and costly transfers by first assessing the severity of the circumstance.

Studies on climate change frequently use the Arctic as a reference point as it invokes imagery where the physical results of climate change are visible and compelling. Further, as resource extraction moves to higher latitudes, those in living in the north experience higher risks. As Wilfred Greaves summarizes:

> Environmental changes in the circumpolar Arctic – both anthropogenic climate change and other forms of ecological contamination, degradation, and exhaustion – are driving complex social and physical processes that place northern peoples and communities on the front line of global environmental insecurity.

A primary way that telehealth can bring an increase in human security is through the very infrastructure that supports telehealth and the various information and communication technologies (ICTs). As the global environment shifts and changes, the north has become increasingly warmer and

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51 Masino et al., 1.
52 Ibid., 3.
plagued by higher sea levels.\textsuperscript{55} ICTs prove an effective instrument for monitoring environmental change, detecting environmental emergencies and educating rural populations on more effective agricultural practices.\textsuperscript{56} The use of telehealth technologies is equally adopted to help provide education to healthcare providers and patients. In a 2013 assessment of the Canadian telehealth system, it was found that the largest increases in total number of annual educational sessions fell within the jurisdictions of Quebec (2010:241, 2012:8660), Northwest Territories (2010: 715, 2012:1087) and Yukon (2010:419, 2012:611).\textsuperscript{57} These numbers suggest that there is an increase in health education sessions being provided to the northern Canada with little to no increase in greenhouse gas emissions produced from travel. This concept, however, has yet to be studied specifically. The increase of educational sessions is indicative of rural Canada being receptive to the widening of services available. The response rate of these educational initiatives was positive with a satisfaction rate of 84.6 per cent calculated in an Ontario study on videoconferencing’s effectiveness on educating and improving home parenteral nutrition care.\textsuperscript{58} The increasing use of videoconferencing by universities and in the business world suggest that it is a sustainable method of inclusion for those inhabiting the remote regions of Canada.

The ability to have telehealth access administered through mobile phones is particularly important for emergency environmental situations in remote communities as it can provide a method to remain in contact with the affected population. Nonita Yap uses the example of a 2008 flood in Bihar, India and the ability for rescue teams to locate – through ICTs with tracking capability - those who were marooned.\textsuperscript{59} In Canada the concept of home telehealth, whereby ICTs are distributed and implemented at the individual level rather than at a local clinic, is only available in the Yukon and was found to be “well below the overall growth of telehealth services” at the national level.\textsuperscript{60} Further expenditures in sustainable and reliable telehealth infrastructure would therefore be an investment in a system that is instrumental in providing physical security and coordinating efficient relief efforts when major disasters strike. Telehealth infrastructural investments, as a means to decrease environmentally harmful

\begin{thebibliography}{99}
\bibitem{60} COACH: Canada’s Health Informatics Association, “2013 Canadian telehealth report,” 25.
\end{thebibliography}
greenhouse gas emissions from travel, can, by extension, contribute to an increase in environmental security.

IV. TELEHEALTH AND CULTURAL SECURITY

Arguably, one of the best features of telehealth is its adaptability to different cultural contexts. Indeed, this was seen as one of the thematic benefits observed in the Sevean et al. study of video conferencing use in northwestern Ontario. The demographic composition of northern Canada is comprised of predominantly of Métis, First Nations and Inuit peoples. In advocating for the need to bring telehealth services to certain marginalized groups in the United States, Alverson, et al. assert the need for adaptive healthcare practices, and lists areas in which telehealth can specialize to help target the specific health needs of women, African-American, Latino, and Native American populations. This concept helps direct resources appropriately and, arguably, demonstrates that telehealth can also be an instrument to better ensure a sense of security for a particular cultural group within the healthcare system. Cultural security, for the purposes of this paper, is guided by the description provided by the Northern Territory Government of Australia “...a commitment that the services offered to [...] will respectfully combine the cultural rights and values of Aboriginal people with the best that health and community service systems have to offer.”

In Canada, some scholars point to the Canada Health Transfer policy as an example of how First Nations groups were caught in a system of dependence on the federal government in addressing their specific health needs. The Canada Health Transfer is the policy through which the federal government allocates funds to subnational governments. Specifically, critics of the Canada Health Transfer highlight that the federal government does not categorize health as an Aboriginal treaty right and subsequently holds the ability to approve or deny funding for First Nations proposals for community health. Indeed, evaluations of the system in question indicate a lack of benefit at the local level, despite an increase in funding to First Nations communities. Fortunately, improvements on this front have been made. In recognition of the importance of having culturally sensitive and adaptive healthcare for First Nations communities, three provinces (British Columbia, Alberta and Ontario) have adopted separate First

61 Sevean et al., 2573-2579.
65 Ibid., 57.
Nations telehealth organizations. These organizations are beneficial in dealing with health and well-being issues that are of particular concern for First Nations populations such as non-insulin dependent diabetes mellitus, infant mortality, suicide, and injuries related to fire. Additionally, these organizations are helping to repair and build trust in Western medicine practices by blending the advantages of telehealth systems with the desires of the local community and, ultimately, providing resources to reduce the removal of individuals from their community. The Keewaytinook Okimakanak (KO) telehealth program, for example,

...participated in an intensive telehealth information and education program including meeting with Health Committees, Band Councils and the general public to introduce the telehealth concept, identify opportunities and respond to concerns. KO Telehealth harnessed the interest in generated in telehealth to build a grassroots network that is owned and operated by the First Nations communities themselves as a catalyst for community empowerment and ownership.

These initiatives are encouraging given the studies that indicate that First Nations people in Canada often experience unique health challenges that require healthcare solutions to be sensitive of these realities. Critics of Canada’s domestic human security policy in the North further call for an ‘indigenous alternative’ whereby “the referent object for life and quality of life [is] to be neither the state, nor the individual but the community, typically the remote small indigenous community which is embedded in the natural environment.” The notion of the community as the base unit for healthcare is not a present reality in Canada. For now, focus remains on the individual alone. This situation highlights Canada’s difficulty to administer human security, as defined by the UNDP, domestically. It must focus on security for the individual while also ensuring a broader security for cultural practices. The establishment of tailored health care programs, respecting rights to culture is, however, indicative of progress in addressing domestic insecurity concerns.

By having a permanent base located in urban areas, telehealth networks in Canada have the advantage of accessing a wide range of translation services to adapt to the needs of those in remote communities. Additionally, the growing use of teleconferencing, whereby a patient can physically see

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68 Adelson, 46-59.


71 Franklyn Griffiths, “Not that good a fit? ‘Human security' and the Arctic,” in “Arctic security in the 21st century,” conference report co-convened by the Simons Foundation and the school for international studies, Simon Fraser University, Simon Fraser University, 2008, 59-60.

72 Greaves, 219-240.

the specialist, addresses the issue of telehealth sustainability. As Jonathan Farag writes: “Good quality communication – including and beyond language – between the patient and providers will be a glue that contributes to quality cross-cultural healthcare delivery though telemedicine.”

A subsequent detriment to telehealth’s success is the local community’s willingness to accept ICTs. This paper applies Farag’s research in the use of ICTs in sub-Saharan Africa to First Nations communities in northern Canada as both regions experience intimate relationships with traditional medicine. ICTs act as an effective channel through which those practice traditional medicine can network and transfer knowledge in the subject. This is particularly important given that traditional healers are not recognized under the Canada Health Transfer policy. Hesitancy towards ICTs has been equally reflected in Labrador and suggests that apprehensiveness about, and distrust of, a videoconferencing system is a relevant issue in all remote communities.

The need to effectively communicate with residents is important in the discussion of technological advancements in healthcare administration; particularly, as the healthcare sector in Canada undergoes a shift towards health promotion, disease prevention, and an increased focus on effectiveness and decentralized decision-making. It would be advisable for the Canadian federal and provincial governments to continue the practice of regionally-focused healthcare as particular health needs and concerns, specifically within Indigenous populations, can be addressed more effectively and efficiently. A more productive health system – a result of telehealth implementation – can lead to greater physical security for the individual while promoting cultural security for the local community.

V. CONCLUSION

The relationship between telehealth and human security, in a Canadian context, is a positive one. Notwithstanding the direct impact on health, telehealth consequently increases an individual’s economic security, the regional environmental security and a distinct community’s cultural security. It is encouraging to see that, on an international level, studies outlining the benefits of telehealth services may be encouraging their use. It is important to recognize, however, that “[g]eneralisability is a problem for telehealth research as a whole, due to variability in clinical disciplines, environmental settings, workforce and health care financing.” In Canada, it is hoped that, as the link between telehealth and human security in remote regions becomes increasingly obvious, municipal, provincial, territorial, and

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78 Ibid., 595-613.
79 Adelson, 46-59.
80 Wade et al., 11.
federal governments work together to fund, support and strengthen such practices. Importantly, there needs to be the sustained presence of functional northern communities within this process. As demonstrated through this paper, the benefits from telehealth in terms of the reduction of barriers to healthcare are manifold. It is telehealth’s broader benefits that make it a clear policy choice to improve welfare and contribute wholly to the underdeveloped regions within developed countries. Finally, Canada cannot claim to be a champion of human security abroad if such gaps persist within its domestic practice.
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