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EVIDENCE SYNTHESIS

THE BENEFITS AND CHALLENGES OF VIRTUAL GERIATRIC CARE IN NEW BRUNSWICK

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NB-IRDT New Brunswick Institute for Research, Data and Training

Written by: Eton Boco and Kyle Rogers, New Brunswick Institute for Research, Data and Training (NB-IRDT)

Additional contributors: Jenna Roddick, APPTA, Samuel Hunter, APPTA, Dr. Ted McDonald, NB-IRDT, and Candice Pollack, APPTA

FOR MORE INFORMATION

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EMAIL: info@appta.ca

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This document has been prepared jointly with the New Brunswick Institute for Research, Data and Training. It is intended to highlight available evidence on virtual care in the health system, and explore how the province of New Brunswick may benefit from enhanced adoption of virtual health technologies, and is based on information available as of the date of publication or as otherwise noted. None of the information in this document should be construed as legal, accounting, or other professional advice.

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EVIDENCE BRIEF

The Benefits and Challenges of Virtual Geriatric Care in New Brunswick

Background:

Currently, older adults represent 16.5% of the Canadian population[1], and are projected to make up 24% of the population by 2038. These trends are more extreme in New Brunswick, where older adults comprise 19.5%, predicted to reach 31% by 2038. Current healthcare system resources and infrastructure in the province are not positioned to sufficiently meet the unique care and treatment needs required by the elderly demographic[2, 3]. Further, more Canadians are choosing to remain in their own homes and communities for the latter years of their lives – a shift referred to as "*Aging in Place*." To provide the necessary care and fulfil New Brunswickers' desires to age in place, updated healthcare delivery pathways need to be established. Given the accessibility barriers that may hinder older adults seeking healthcare, using technology to deliver care virtually could be a key driver of positive disruption in the healthcare system.

The older adult population in Canada is growing—and as the percentage of Canadians 65 years and older increases, so too does the need to innovate healthcare delivery.

Technology has always played a significant role in healthcare, and especially in older adult care. Due to the nature of geriatric conditions and diseases, as well as limitations to mobility exacerbated by the COVID-19 crisis, creating a healthcare system that can provide older adults with easy access to continuous care and/or supervision and quick diagnoses is key. Virtual methods and tools – such as vitals trackers, teleconference platforms for virtual visits, and smart-device-assisted living – have been explored as a way to provide quality care to older adults. The

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use of these devices is especially important in an era of mandated physical distancing to prevent further spread of COVID-19, to which older adults are most vulnerable. Because of these reasons, and many more detailed below, older adults may benefit the most from virtual forms of healthcare delivery.

To help inform the future of healthcare delivery for older adults in Canada, this brief provides an overview of the various types of virtual care solutions, their usage among Canadians and older adults more specifically, the benefits and challenges associated with their adoption, and finally, a set of evidence-informed policy considerations for future healthcare decision-making.

Methods

For this brief, a review and synthesis of quantitative and qualitative research articles and reports were performed. The inclusion of studies using multiple methodological approaches helps broaden the understanding of the impact of virtual care in geriatric care and can be used to guide its uptake in New Brunswick. The literature search was performed across electronic databases and search engines such as the Cumulative Index of Nursing and Allied Health Literature (CINAHL), PsycInfo, Abstracts in Social Gerontology, and Google Scholar. Broad search terms were employed to capture the various synonyms for virtual geriatric care. Reports and articles used in the brief focus on geriatric care and the virtual forms and methods of providing that care.

Part 1. Overview of Canadian Virtual Care Practices

Mentions of virtual care now often elicit visions of patients and physicians chatting over Zoom from the comfort of their homes. Yet, virtual healthcare and eHealth encompass a variety of applications beyond videoconferencing. Virtual care can be broken down along the lines of synchronicity and number of participants:

- *Solo participant* (requires the participation of a single individual) *active asynchronous* solutions (electronic views (eViews), electronic booking services) require participation from either the patient or the physician.

- *Dual participant* (includes at least two participants) *active synchronous* solutions (videoconferencing) are solutions that require two participants to actively participate at the same time.

- *Dual participant active asynchronous solutions* (secure e-mail, SMS or app communication, and some types of remote patient monitoring) require active non-concurrent participation from two participants at different times.

- *Multi-participant synchronous and asynchronous solutions* mirror the technologies that facilitate communication between two participants, and allow more than two individuals (e.g., expanding communication from patient and primary care provider to include patient family members and/or specialist care providers).

A recent survey from Canada Health Infoway outlines some of the myriad virtual care and eHealth solutions available in Canada.[4] The table below demonstrates where they fall in terms of number of participants and synchronicity.

PARTICIPANTS	Synchronicity:	
	Asynchronous	Synchronous
Solo: Patient	eViews of personal health information, prescriptions and Rx history and specialist referral requests, patient portals	
Solo: Provider	Remote patient environmental monitoring devices	
Dual: Provider to Provider	Virtual care: • secure e-mail • SMS App communication	Virtual care: video conferencing
Dual: Patient and Provider	Virtual care: • secure e-mail • SMS • App communication Remote patient monitoring: • vital sign monitoring devices • patient symptom surveying apps and websites	Virtual care: video conferencing
Multi: Patient and multiple providers	Automated administrative technologies such as appointment bookings, reminders, referral tracking, and e-prescribing services that allow patients, primary care	Virtual care: video conferencing

	providers, and specialists to coordinate clinical care more efficiently	
Multi: Patient, family members, and multiple providers	Virtual care: • secure e-mail • SMS • App communication Remote patient monitoring: • vital sign monitoring devices • patient symptom surveying apps and websites	Virtual care: video conferencing

1. Internet Enabled Access to Real Time Patient Health Information

Applications like eViews and patient portals are web-based solutions that allow patients to access the personal health information contained in their electronic medical records (EMR), including information such as lab results, immunization records, prescription history, hospital visit history, and so forth.[5] A 2018 review indicates that four provinces (Nova Scotia, Saskatchewan, Alberta, and Quebec) had begun implementing province-wide strategies for making patient health information available to patients through eViews and patient portals.[6] In Ontario, Manitoba, and British Columbia, there were no provincial initiatives; but individual healthcare providers, hospitals, and health regions were using EMR solutions to allow patients to access their health information. As of 2018 there did not appear to be eView or patient implementation in New Brunswick, Newfoundland and Labrador, or any of the territories. However, spurred on by the COVID-19 pandemic, New Brunswick[7] and Newfoundland and Labrador[8] have both developed patient portals that allow citizens to access their COVID-19 test results online. This trend in actions taken by Canadian jurisdictions to invest in these technologies, though largely driven by the COVID-19 pandemic, will likely continue in the years to come and as public interest rises.

2. Technologies for Facilitating Clinical Care

These solutions aim to streamline administrative processes associated with the provision of care. For example, facilitating a physician visit or renewing a prescription are two important aspects of healthcare delivery – however, both require a great deal of coordination on behalf of patients, physicians, pharmacists, and care provider administrative staff. Streamlining, automating, and downloading the administrative components of this work onto digital platforms allows everyone involved to spend more time focusing on providing and receiving care.

One Canadian example of this is PrescribeIT.[9] PrescribeIT is an e-prescription service developed by Canada Health Infoway and Health Canada which aims to facilitate pharmacist, physician, and patient communications surrounding prescriptions. PrescribeIT incorporates the following features:

- Secure electronic transmission of prescriptions for all medications,
- The ability to send prescription renewal requests from a pharmacist to a prescriber,
- Prescriber access to public drug formulary to help confirm relative costs and coverage,
- Secure messaging between prescribers and pharmacists to eliminate fax and phone activity,
- Integration with drug information systems to contribute to patient medication histories, and
- The ability for a prescriber to send a prescription cancelation to a pharmacy.

Currently, PrescribeIT has agreements with nine provinces and territories and has been deployed in communities in Ontario, New Brunswick, and Saskatchewan. Additionally, they are working with 32 community pharmacy organizations, accounting for approximately 3,400 pharmacies across the country.

3. Virtual Care

Virtual care solutions aim to replicate care provider/patient interactions virtually, bringing physicians directly to patients when they need care. These e-visits can take the form of asynchronous messaging, or synchronous videoconferencing. Two large Canadian pilot projects in Ontario[10] and British Columbia[11] deployed virtual care solutions from Novari Health, Think Research, and Quality Health Technologies, which included videoconferencing, secure picture messaging, and secure text messaging. Both pilot projects demonstrated that virtual care (asynchronous messaging in particular) received high marks among patients for convenience and access. Further, Alberta Health Services adopted Zoom for Healthcare to facilitate videoconferencing in its larger eHealth ecosystem, a system that allowed them to transition quickly to online services following the advent of the COVID-19 pandemic.[12] Finally, in NB, eVisit NB makes use of the Maple software suite to facilitate virtual care (videoconferencing, asynchronous messaging) and telecare (phone).[13] While little research has explicitly examined these implementations, recent patient surveys implemented following COVID-19's shift to virtual care suggests that patients accept virtual care in lieu of traditional care. For additional information on other virtual care solutions adopted since COVID-19 see: https://agewell-nih-appta.ca/wp-content/uploads/2020/10/Agewell-VirtualHealthcareSolutions1Pager-ENG.pdf

4. Remote Patient Monitoring

A 2014 pan-Canadian study defined remote patient monitoring (RPM) as "the delivery of health care to patients outside of conventional settings enabled by a technological application or device."[14] RPM involves the asynchronous transmission of patient data to care providers and can be envisioned as existing on a spectrum of participant activity that includes self-monitoring programs, assisted monitoring programs, and environmental monitoring programs.

Self-monitoring programs include programs in which patients actively collect and report their health information themselves, while assisted monitoring programs involve support from community care professionals. Finally, environmental monitoring programs use devices installed in the home that passively monitor various aspects of patient health.

Canadian examples of RPM implementation include a series of home health monitoring projects implemented between 2012 and 2018 by the Ontario Telemedicine network or Canada Health Infoway.[15-22] These projects utilized remote patient monitoring solutions such as Telus Home Health[23] and Health Harmony Maestro[24] to facilitate homecare for patients with chronic conditions such as Chronic Obstructive Pulmonary Disease and congestive heart failure.

A recent national recap of the Canada Health Infoway programs[25] reports that more than 30,000 patients have experienced remote patient monitoring, avoiding 27,000 hospitalizations and 46,000 trips to the emergency room with consistently good qualitative experiences among participants. While these studies did not focus explicitly on older adults, the population they served were effectively an older adult population – and these individuals did not struggle with adopting the eHealth solutions.

Prior to the COVID-19 pandemic, various eHealth and virtual care methods were being tested and implemented throughout Canada in an *ad hoc* manner, as different provincial and regional jurisdictions explored the functionality of different solutions. This included the application of synchronous (videoconferencing) and asynchronous solutions across every facet of the healthcare system. Each solution shared the same over-arching goal: improving Canadian healthcare via digitization.

When the COVID-19 pandemic occurred, the implementation of disease containment measures eliminated this *ad hoc* approach, forcing the universal adoption and standardization of eHealth

solutions across Canada. In the next section, we explore Canadians' use of eHealth and other forms of virtual care, with a focus on older adults.

Part 2. Overview of eHealth and Technology Utilization Among Older Adults

A 2019 survey of 4,335 Canadians estimated that only 3-6% had utilized some type of virtual care in the past year (6% had used secure email; 5% had a remote patient monitoring device in the home; 5% accessed care through SMS or an App; and 3% had undergone a virtual visit). Other eHealth solutions such as tools for viewing personal health information and automated prescription reminders had greater uptake – by 17% and 18% of survey participants, respectively.

While Canadians' pre-COVID-19 utilization of virtual care is low, the same cannot be said for Canadians' interest in virtual care. 69% of Canadians reported they would have a virtual healthcare visit if available. [26] Additionally, 71% expressed the wish to book appointments electronically, 63% wanted to email their healthcare provider, and 41% stated they would like to have video visits with their healthcare providers.

The lack of availability of eHealth solutions is likely the explanation for the difference between interest and uptake– regardless of interest, people cannot use a service that does not exist. A 2018 survey of 1,400 Canadian physicians highlighted the low availability of eHealth solutions, with 4% of primary care physicians and 9% of specialists indicating they use video visits.[27] Further, only 24% of family physicians offer email communications, and 9% allow bookings for appointments online. A lack of eHealth remuneration schemes, a lack of guidelines to ensure privacy and security, and a need for better technology and support services were indicated as critical barriers to adopting eHealth solutions in practice.

There is a limited amount of Canadian literature regarding the intersection of aging and eHealth. One pre-COVID-19 survey estimates that *90% of adults between the age of 50-64 and over the age of 65 had not had an online 'visit' with a care provider, despite the fact that 74% (65+) and 80% (50-64) reported that they were confident* using current technology[28]. One explanation for this discrepancy are the cohort effects seen in Statistics Canada's Canadian Internet Use Survey. Data from the survey demonstrates that adults over the age of 65 are less likely to engage with the internet or mobile technologies than individuals between the ages of 15-64. Further, older adults are less likely to have internet access (79.1% vs. 93.5%), own a smart phone (60.4% vs. 88.1%), use government services online (57.9% vs. 74.1%), or use smart home devices (35% vs. 53.3%), in addition to displaying lower intensity of use (less than 5 hours of internet use per week: 38.8% vs. 24.9%)[29]. This data suggests that both access to technology and digital literacy may act as barriers to adoption for older Canadians. Additionally, one systematic review of international literature identifies these cohort trends as motivational inertia barriers,[30] but argues these barriers can be overcome with effective care planning, technology coaching, and communication between care provider and the older adult patients.

With COVID-19 and subsequent disease containment measures impacting traditional care provision, the barriers described above are being addressed in order to keep patients both safe and healthy.[31, 32] These efforts have led to an increase in remote care provision, particularly among adults over the age of 45.[33] Importantly, a large proportion of those who used remote services indicated interest in using eHealth solutions following the COVID-19 crisis. This suggests that the motivational inertia difficulties described above can indeed be overcome – perhaps as easily as by having healthcare providers make the option available. As such, eHealth solutions present viable tools in the provision of older adult care now and into the future. The following sections elaborate upon some of the benefits and challenges associated with the adoption of such solutions.

Part 3. Challenges and Advantages Associated with the Adoption of Virtual Health Technologies

Benefits and Challenges for Healthcare System Users

The use of virtual methods in geriatric care improves the well-being of older adults despite the physical distance between them and their health care providers.[34] Studies show that virtual care aids in improving patient health with regard to quicker/easier diagnosis and monitoring, encourages independent living while reducing isolation, improves access to care, reduces treatment costs and results in fewer admissions and readmissions.[34] In a province like New Brunswick, where 39% of older adults are living with three or more chronic conditions and 35.8% of older adults are impacted by some kind of disability affecting daily living,[1] virtual advances in geriatric care could help alleviate some of the challenges currently associated with usual (i.e. non-virtual) care methods.

Many virtual methods of care delivery[1] have been established to support in-home and independent living in the face of physical and/or cognitive declines. In NB, these types of services are essential, as 79% of NB older adults own their own homes and 26.5% of those in private households live alone.[1] These established technologies have the capacity to provide regular or continuous real-time information on the patients who use them, promoting efficiency and safety. For instance, health information obtained through remote patient monitoring and communication devices, such as glucose monitors and fall detection technologies, is more easily shared with

[i] These virtual methods include but are not limited to tools aimed at communicating and informing (e.g. vitals trackers, videoconferencing, electronic medical health records, telephone-based support services), assistive technologies (e.g. video systems that allow interaction within the home, behaviour and location sensors, smart home devices) and human-computer interaction technologies (e.g. rehabilitation robots, exoskeletons and humanoid robots).

medical professionals and family members. Whether these tools are mobile or built into the living environment and integrated with other technologies in the home, they have the capacity to mitigate potential crises and/or expedite care by alerting either the primary user, caregivers, medical providers, family members, or emergency services of changes in patient location, behaviour, vital signs, or other forms of health emergencies.

A review of the existing literature reveals that elderly patients who engaged in virtual doctor appointments reported feelings of safety and security, a reduced sense of isolation, and an increase in social activity.[35-39] The decreased sense of isolation and increased social activity brought about improvements in memory and attention and reduced feelings of melancholia – especially in patients with mental and physical health problems.[35] In one study,[36] patients who engaged in telehomecare showed significantly higher levels of access to care and satisfaction, and spent fewer number of days in home care overall.[2] The provision of more convenient and equitable access to medical care would be useful to the 47.4% of NB older adults who live in rural or remote communities [1] due to their limited access to transportation or the existence of disabilities that limit mobility. This demographic is also likely to benefit from improved health outcomes, as older telehealth recipients are shown to experience fewer hospital admissions than usual care recipients[40] and fewer readmissions overall.[36]

With older adults – in remote areas and otherwise – timely intervention is key because unmanaged geriatric conditions can lead to more costly and sometimes irreversible complications.[41, 42] Virtual care methods provide easy access to healthcare services and help cut down on time to access care, preventing the exacerbation of patient conditions and overall treatment costs.[32] Medication compliance is also identified as a major benefit of virtual care. Identifying barriers to compliance (like forgetfulness, too many medications, or mistrust) and

[ii] Telehomecare refers to the delivery of healthcare to patients at home using technologies that enable voice and video interactions as well as exchange of health information.

providing reinforcements and reminders is shown to increase patients' abilities to self-manage their conditions and improve their overall satisfaction.[39]

Yet, despite the usefulness of virtual care technologies, there are several factors that affect adoption among older adults[43] including the relative inexpensiveness of comparable non-technological assistive devices,[44, 45] lack of coverage by health insurance, and perceptions that overlook the value and benefits of these technologies.[46] Also, for older adults in rural communities, the internet-based nature of virtual care can further exacerbate inequalities in access to care seeing as only 40.8% of rural households enjoy the same download and upload speeds as urban areas.[47] Other barriers to adoption include worries about the costs and the potential that patients may be too sick to use home telehealth and other technologies.[36] These factors are accompanied by a general assumption that older adults are unwilling or unable to adapt to new health technologies, which might contribute to health professionals[48] being less likely to make the option available to them.[49] With regard to the last explanation, recent evidence suggests otherwise. In a survey carried out by AGE-WELL, 70% of Canadians over the age of 65 would be willing to pay out of pocket for technology to stay in their own home. As well, more than half of the older adults surveyed agree that technological advances in their care will help with safety, independence and activity levels as well as reduce social isolation.[50]

Benefits and Challenges for the Healthcare System

Virtual health solutions can help reduce overall healthcare expenditures and the number of in-person visits to hospitals, clinics, and wellness centres, while also increasing hours of contact between medical professionals and patients.[51] Beyond improving convenience for patients and reducing transportation costs and mobility hindrances,[52] virtual technologies also help inhibit nosocomial infections,[3] which are associated with hospitalizations.[53, 54] This is especially important, seeing as these infections account for a large percentage of increased lengths of hospital stays and other burdens on the healthcare system.[55]

Since the COVID-19 crisis began, limiting the spread of infection has been a primary goal for both governments and healthcare officials. With older adults being among the most vulnerable segment of the population, the virtual extension of a health professional into an older adult's residential space limits the potential for the spread of infection while providing a platform for preventive health education and maintenance/monitoring. Nonetheless, major barriers surround the adoption of these tools, including uncertainty concerning governance of compensation mechanisms, licensure restrictions on the provision of care across provincial boundaries, and a lack of interoperability between and among patients, hospitals, and physicians.[56]

Other barriers include privacy concerns, the general cost of implementation and usage of virtual methods, and the assumption that older adults are not perceived to be technologically inclined and therefore are not offered opportunities to use these technologies. Additionally, reduced upload and download speeds currently within rural communities[47] acts as a barrier to uptake for the proportion of older adults living in those communities. While exploring the details of the costs to implementation is outside the scope of this report, it should be noted that costs will differ

[iii] Nosocomial infections, also known as healthcare-associated infections, are those contracted due to an infection that exists in a hospital or other health-care location.

according to location and sociodemographic factors. Nonetheless, keeping population differences in mind, NB may be able to roughly estimate the cost of implementing virtual forms of healthcare in the province, based on analyses of the costs in similar regions.

Benefits and Challenges for Physicians

The aforementioned increase in the number of older people in need of care has been accompanied by a simultaneous shortage of skilled labour able to provide healthcare for this population.[57] In Canada, there is currently a total of only 242 certified specialists in geriatric medicine, and more than 30% of them are over the age of 55.[58] Research suggests that this is less than half the number of specialists needed to adequately meet the existing and expected demand for increased care.[58] Likewise, the Conference Board of Canada reports that in order to meet the growing need for care by older adults, the nursing workforce would have to grow by 3.4% annually; currently, it is only growing by 1%.[59] There is a similar lack of healthcare assistants, as demands for their services are 3% higher than the current supply. Along with labour shortages, the working conditions of care workers also present an obstacle, as 90% of frontline care workers in Canada experience physical violence from patients or their relatives, with 43% reporting this as a daily occurrence.[60] This contributes to ongoing difficulties surrounding the recruitment and retention of care workers, alongside additional influential challenges, including burnout, poor working conditions, stress, and low work satisfaction.

Virtual health technologies can help alleviate some of the challenges experienced by care providers. Its formats– including, for example, virtual visits, video teleconferencing, and mobile health applications– enable health professionals to assess older adults' health conditions. This allows for remote diagnosis, treatment recommendations, and care coordination, as well as collaboration with other care professionals. Nurses who have delivered health services via virtual visits reported the ease with which knowledge was transferred, along with an increase in patients'

abilities to administer self-care.[39, 61, 62] They found communication with patients to be more personal and trusting, despite the lack of physical contact. Also, because technology made it possible to deliver continuous and coordinated care virtually, relapses into poor health were more likely to be prevented. One study found that virtual visits aided in the prevention of colds and infections, effectively reducing the demand for healthcare staff in the treatment of these conditions.[38] In a province like New Brunswick, where formal caregivers experience one of the highest burnout rates,[47] the improved working conditions virtual care creates could aid some of the issues contributing to staffing shortages in these areas.

By extending the reach of formal caregivers, these technologies ultimately offset costs for care and the need for increased healthcare human resources in more rural areas.[63] Nonetheless, there are some concerns among healthcare staff about incorporating virtual methods into care routines. A recurring theme in the literature relates to concerns regarding privacy and security of patients' health information, especially among care professionals.[64, 65] To address these concerns, the literature recommends following existing guidelines on the provision of virtual care and using platforms and methods approved by governing boards.[66] On the other hand, these methods and guidelines need to be continuously updated to keep up with societal changes and technology as a whole. Other concerns revolve around the quality of care provided, since the lack of physical contact could mean a healthcare provider is less able to observe changes in a patient's health.[67] To prevent this from occurring, it is recommended that healthcare professionals ensure a combination of virtual and in-person care is used, rather than replacing one with the other.[68]

The use of virtual technologies in geriatric care has more advantages than disadvantages for stakeholders in the Canadian healthcare system. Patients are afforded the luxury of aging in place while still feeling secure and connected to their healthcare providers through efficient monitoring and diagnosis programs. For physicians, virtual technologies help alleviate challenges related to healthcare worker shortages, safety, and overall reach while retaining patient trust and privacy

needs. The Canadian healthcare system benefits from virtual technologies in geriatric care chiefly through reduced expenditures and infection spread. Challenges in uptake for all three stakeholders relate to the cost of implementation and the ease of use among the target population.

Part 4. Policy Considerations

The integration of virtual health technologies presented in this review shows potential for enhancing access to healthcare services, particularly to benefit older adults. The COVID-19 pandemic is playing a critical role in rapid uptake of virtual methods and tools to provide timely and appropriate care delivery. Lessons learned from practitioners and patients during this period are key to the future implementation and normalization of virtual healthcare as a safe and accessible alternative to in-person care provision, where appropriate. Some of the policy measures that can be employed by governments to improve the virtual healthcare landscape include revised service remuneration, financial support and incentives to cover the upfront costs of technologies both at the clinic and patient level, and enhanced internet access in rural and remote communities. These steps are pivotal for improved adoption of virtual health in Canada:

1. Provide incentives to support the adoption of virtual health technologies in primary care practices.

At the physician level, movement must be made to support the adoption of virtual methods in primary care practices. This includes better financial incentives to facilitate clinical uptake of the appropriate equipment, software, and education necessary for adoption of virtual care tools. Accordingly, policy changes should focus on creating equitable remuneration for virtual visits by instituting tax incentives to support the purchasing of equipment or software necessary for virtual care provision[4] and the support of clinic staff training. At the patient level, develop programs to

[iv] For instance, information and communication technologies (ICT), online booking platforms, extra digital devices, etc.

mitigate access barriers, such as cost and education, to ensure successful uptake of virtual methods employed by clinicians.

2. Address privacy concerns of individuals and healthcare professionals as they relate to virtual health technologies.

Protections for both the patient and care provider to communicate safely and effectively can be put in place through legislative reform, careful selection of ICT platforms, and improved privacy policies. Government selection of secure platforms, such as was done in Québec, is a critical support for providers and patients who choose virtual care. Additionally, action must be taken to ensure patients are aware of the protection measures put in place in order to alleviate concerns around using virtual care. Provincial governments, such as the Government of Prince Edward Island, have made efforts to ease the process of adoption and alleviate security concerns by purchasing special licensure for Zoom for Healthcare that allows patients and providers to securely connect via video conference. Other provinces have taken similar approaches with specific software platforms over the course of the pandemic to alleviate some of the pressures placed by COVID-19 on the healthcare system.

3. Continue to expand bandwidth and internet access in rural and remote communities.

Rural and remote communities require better access to reliable internet in order to ensure equitable participation in the future digital healthcare system. While 86% of Canadian households are able to access download speeds of at least 50 megabits per second, only 41% of households in rural communities have similar access.[32] Fortunately, efforts by the federal government are underway to enhance broadband in many northern Canadian communities. On November 19th 2020, the Canadian Prime Minister announced an investment of $1.7 billion in a universal broadband fund that will be used to build infrastructure across the country almost entirely within

rural and remote communities.[69, 70] Many rural areas, specifically in the Northwest Territories, invest heavily in and rely on medical travel to meet emergency needs. With more reliable and affordable internet to support the adoption of information and communication technologies in the medical setting, there may be opportunities for cost savings and more timely medical care.

4. Balance the use of virtual health technologies and traditional assistive devices to improve healthcare for older adults.

It should be noted that although virtual health technologies stand to improve the healthcare system in New Brunswick, traditional care methods and assistive devices should not be overlooked. Research shows that basic assistive devices that aid in mobility, vision/hearing, and comfort are just as important in contributing to the overall quality of life of older adults.[71, 72] From eyeglasses to ramps, studies show that when older adults have these non-technological assistive devices incorporated into their homes, the need for in-person home care is also reduced.[73, 74] In order to be effective, monitoring, diagnostic, and treatment technologies have to be integrated into existing health methods and should be implemented in such a way that they fit seamlessly into older adults' daily lives. There must also be a commitment to ensuring technology is not overused. Such overuse could lend itself to the disuse and subsequent erosion of basic skills and abilities among patients, which could ultimately undermine motivation and compromise autonomy and independence through a false sense of security.[45] Therefore, a balance should be struck between the use of virtual health technologies and traditional care methods.

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