

Panel Summary

Using Remote-monitoring Technologies to
Enable People to Stay in their Homes in
Canada

4, 10 & 11 November 2022



McMaster Health Forum

The McMaster Health Forum's goal is to generate action on the pressing health and social issues of our time. We do this based on the best-available research evidence, as well as experiences and insights from citizens, professionals, organizational leaders, and government policymakers. We undertake some of our work under the Forum banner, and other work in our role as secretariat for Rapid-Improvement Support and Exchange, COVID-19 Evidence Network to support Decision-making (COVID-END), and Global Commission on Evidence to Address Societal Challenges.

Citizen panels

A citizen panel is an innovative way to seek public input on high-priority issues. Each panel involves 14 to 16 citizens from all walks of life. Citizens share their ideas and experiences on a particular issue, and learn from research evidence and from the views of others. A citizen panel helps us to understand the values that citizens think are important when making decisions about the issue, and reveals new understandings about the issue and how it should be addressed.

This panel summary

In November 2022, we convened four citizen panels on using remote-monitoring technologies to enable people to stay in their homes in Canada. This summary highlights the views of panellists about:

- the challenges of adopting remote-monitoring technologies
- possible solutions to address these challenges
- potential barriers and windows of opportunity to move forward.

The citizen panels did not aim for consensus. However, the summary describes areas of common ground and differences of opinions among panellists and (where possible) identifies the values underlying different positions.



Exploring the problem



Discussing solutions



Identifying barriers and windows
of opportunity to moving forward

Summary of the panels

Four citizen panels were convened virtually – each engaging a diverse group of eight to 15 citizens (in terms of age, gender, ethnocultural background and socio-economic status) – to discuss about using remote-monitoring technologies to enable people to stay in their homes in Canada.

While panellists were generally enthusiastic about the potential of such technologies, they identified 10 challenges to adopting remote-monitoring technologies:

- a lack of public awareness about remote-monitoring technologies and how they can support aging in place
- the idea of remotely monitoring people could raise concerns and fears
- the individual costs associated with remote-monitoring and associated technologies could reinforce a two-tiered system
- there is uncertainty whether there is a threshold where remote-monitoring technologies are no longer cost-effective
- privacy concerns can evolve over time and along illness trajectories
- there are divergent views about the protection of personal data that may be hard to reconcile
- it is challenging to navigate what technologies/services are publicly covered or not
- there are concerns that these technologies will replace human contacts
- there is a need to ensure the validity and reliability of remote-monitoring technologies
- there are many attitudinal barriers making it hard to innovate.

After discussing the challenges, panellists were invited to reflect on three solutions to support the use of remote-monitoring technologies to enable people to stay in their homes in Canada. A few panellists suggested that the sequencing of solutions proposed in the citizen brief should be revised. We should start with solution 3 (adopting a rapid-learning system approach and address all system-level challenges), then pursue solution 2 (enabling organizations and providers to use and adopt remote-monitoring technologies), and finally focus on solution 1 (supporting people, their caregivers and their families to use and adopt remote-monitoring technologies). These panellists were concerned about creating expectations that could not be met if the providers, organizations and systems were not ready.

After discussing possible solutions, panellists examined potential barriers and windows of opportunity for moving forward. The discussion generally focused on three key barriers to bring about change: 1) not all Canadians may be receptive to using remote-monitoring technologies (for example, loss of privacy); 2) some providers and organizations may resist change because they currently benefit from the status quo; and 3) politics often get in the way of addressing healthcare crises even though everyone agrees about the solutions.

Panellists also identified four key windows of opportunity to move forward, notably: 1) there are “tremendous opportunities” offered by these technologies to ease pressure on health systems and address long-standing issues; 2) while some older adults may be resistant to these technologies, more and more people are becoming familiar with such technologies (and we may see a major generational shift in coming years); 3) pan-Canadian organizations like Canada Health Infoway could be leveraged and help with collaboration; and 4) the emergence of remote-monitoring technologies offers economic development opportunities.

Exploring the problem

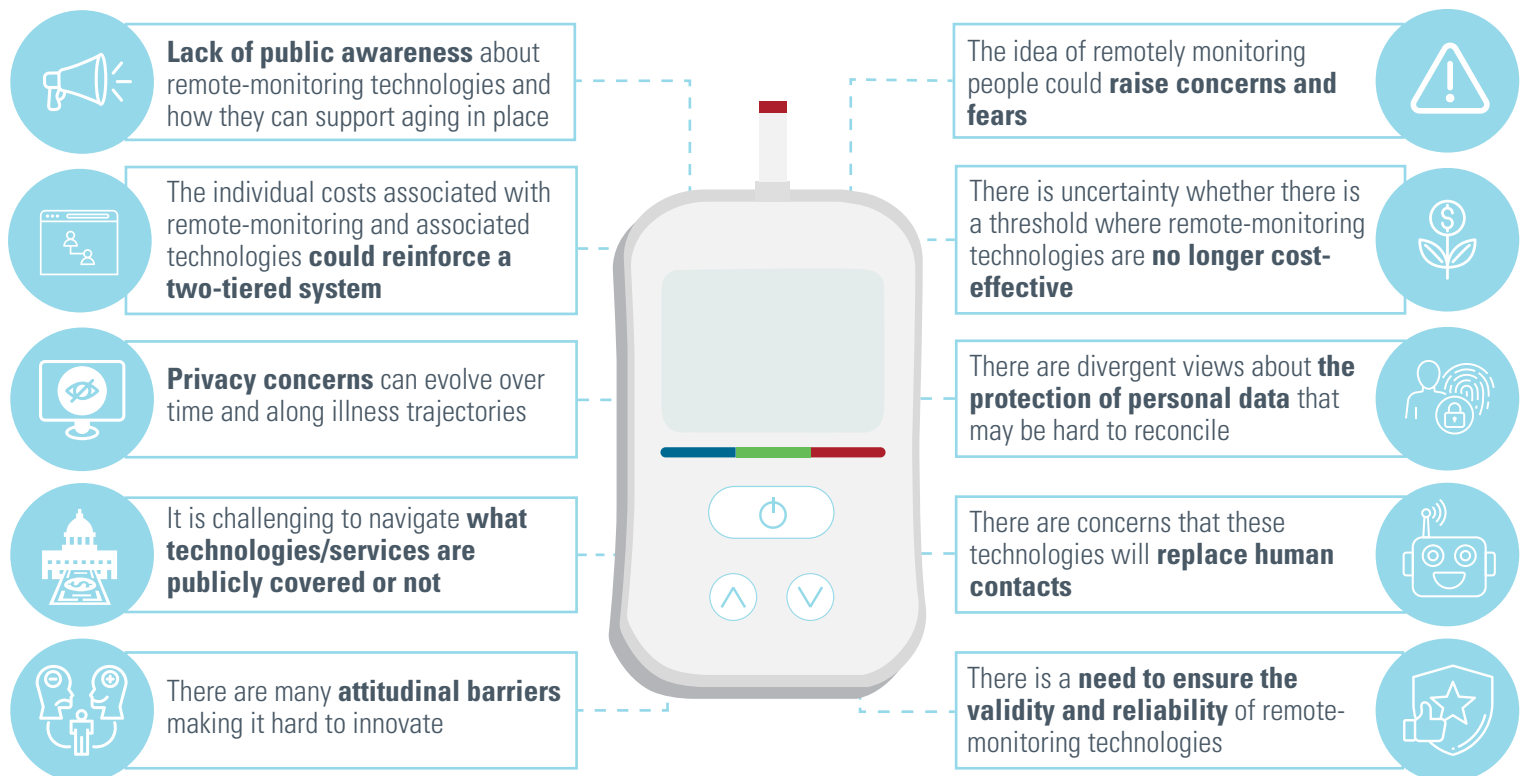
Why is it challenging to adopt remote-monitoring technologies to enable people to stay in their homes?

Four citizen panels were convened virtually – each engaging a diverse group of eight to 15 citizens (in terms of age, gender, ethnocultural background and socio-economic status) – two panels on 4 November 2022 (one with anglophone panellists from British Columbia, Alberta, Saskatchewan, Manitoba, Yukon Territory and Northwest Territories; and the other with anglophone panellists from Ontario and Quebec), one panel on 10 November 2022 (with anglophone panellists from New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland), and one panel on 11 November 2022 (with francophone panellists from Ontario, Quebec and New Brunswick). The majority of panellists (57%) had experiences with remote-monitoring technologies, either for their own health or as caregivers for others, while the remaining 43% did not have experience with remote-monitoring technologies prior to the panels. Panellists were provided with a plain-language version of the evidence brief prior to the citizen panel, which served as an input into citizens' deliberations.

Overall, panellists were positive about the potential of remote-monitoring technologies to support aging in place (with home modifications, the use of assistive devices, income support, etc.), empower older adults and caregivers, improve timely access to care, as well as relieve pressure on caregivers and the health and social systems. As one panellist said: "We should embrace remote-monitoring technologies."

While panellists were generally enthusiastic, they identified 10 challenges to adopting remote-monitoring technologies to help people to stay in their homes in Canada. These are summarized in Figure 1.

Figure 1. Summary of citizens' views about challenges



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Exploring the problem (cont'd)



- A few panellists had experience with remote-monitoring technologies, but most were familiar with technologies available on the market that can monitor health conditions and the home environment (for example, smart watches and smart-home technologies)
- A few panellists indicated that they wished to advocate for the use of remote-monitoring technologies, but to achieve this, there is a need to raise public awareness about these technologies



- As one panellist said, the idea of remotely monitoring people gives the impression that everyone would be “chipped” (meaning the use of microchip implants in the body) and monitored by “Big Brother”
- Panellists in the French panel said that the term “télésurveillance” could reinforce these concerns and fears, particularly among historically disadvantaged populations
- Some panellists indicated the need for a more positive “branding” of these technologies



- Several panellists expressed concerns about the potential costs for individuals: accessing the technologies, adapting the home to install the technologies, having affordable access to broadband internet, obtaining tech support, and changing technologies when they become obsolete
- One panellist talked about a paradox: those who could benefit the most from remote-monitoring technologies seem to be the ones facing the greatest challenges (for example, the burden of multimorbidity is known to be associated with lower socio-economic status, and those from rural/remote regions are the ones with the most limited digital infrastructures)
- Panellists feared that the costs for individuals could reinforce a two-tiered system
- A few panellists were also concerned about cross-jurisdictional disparities in terms of their capacity to scale up and spread remote-monitoring and associated technologies (for example, some provinces and territories may face more challenges when tackling the infrastructure problems)



- Panellists generally envisioned that remote-monitoring technologies could reduce costs for health and social systems, especially among high-risk individuals
- However, some panellists wondered if there was a threshold where these technologies would no longer be cost-effective
 - For example, if everyone has access to such technologies, could it increase the number of people seeking care and put additional pressures on health and social systems (thus increasing system costs)
 - For example, the “cognitive overload” of professionals is already considerable and there are concerns that it could become worse if remote-monitoring technologies are deployed on a large scale



- Panellists discussed at length privacy concerns related to remote-monitoring technologies
- Some pointed out that trade-offs needed to be made between complete privacy and optimal care
- These trade-offs may evolve over time (and changing personal circumstances), as well as along illness trajectories
- As one panellist said: “We need a framework where you can decide what you want to share. As it stands, everyone is afraid of offending somebody. Personally, if I’m found lying on the street, I would want my full medical history made available.”



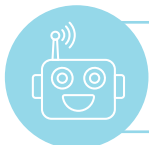
- Panellists agreed that there was a need to protect personal data collected via remote-monitoring technologies from any criminal use (for example, stealing someone’s identity)
- A few panellists were concerned that some Canadian and foreign companies developing these technologies may use the data for purposes other than providing optimal care
- One panellist raised questions about how collected data would be handled given the structures, processes and protocols used for First Nations, Inuit and Métis data
- However, panellists expressed divergent views about potential uses of personal data
 - Some panellists believed that the data should only be used to provide optimal care to the individual (as one panellist said: “The primary use of the data must not be diverted”), while others saw an opportunity to use the data at the population level to analyze trends, or to be used to support innovation and economic development
- As one panellist said: “People need to know how data will be used, stored, and whether it will be anonymous.”



- Some panellists indicated that navigating what technologies/services are publicly covered or not was challenging
- One panellist indicated some technologies with the capacity to do remote monitoring were not covered (only the basic model without remote monitoring was)
 - One panellist talked about her experience buying a CPAP machine (continuous positive airway pressure for sleep apnea), as the Régie de l’assurance maladie du Québec was only covering the basic model (without remote-monitoring capacity,) and indicated that the model with remote-monitoring capacity was considered as “comfort” and thus unnecessary

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Exploring the problem (cont'd)



- Some panellists worried that health and social-care professionals could lean too much on remote-monitoring technologies
- They pointed out that care is about communication and relationships
- Relying on technologies alone may miss out on the necessary human-to-human contacts when providing care



- A few panellists expressed concerns about our capacity to ensure that remote-monitoring technologies are valid and reliable
- As one panellist said: "Not all devices are created equal."



- Panellists generally agreed that it was time to bring health and social systems to the digital age
- However, several panellists indicated that the country was slow to innovate
 - One panellist recalled that there were dialysis machines back in the 1980s that were reporting back to the care team via a phone line: "If we were there then, we should be further now."
- Many panellists pointed to attitudinal barriers from the public and professionals as major roadblocks to innovation
- As one panellist said: "Sometimes we should step outside of the box and ease up on that rigidity."

Box 1: Key features of the citizen panels

The virtual citizen panel about addressing the politics of the health human resources crisis had the following 11 features:

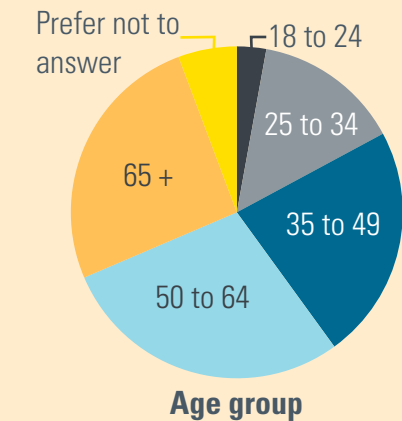
- it addressed a high-priority issue in Canada
- it provided an opportunity to discuss different features of the problem
- it provided an opportunity to discuss solutions for addressing the problem
- it provided an opportunity to discuss key barriers and windows of opportunity to move forward
- it provided an opportunity to talk about who might do what differently
- it was informed by a pre-circulated, plain-language brief
- it involved a facilitator to assist with the discussions
- it brought together citizens affected by the problem or by future decisions related to the problem
- it aimed for fair representation among the diversity of citizens involved in or affected by the problem
- it aimed for open and frank discussions that preserved the anonymity of participants
- it aimed to find both common ground and differences of opinions.

Exploring the problem (cont'd)

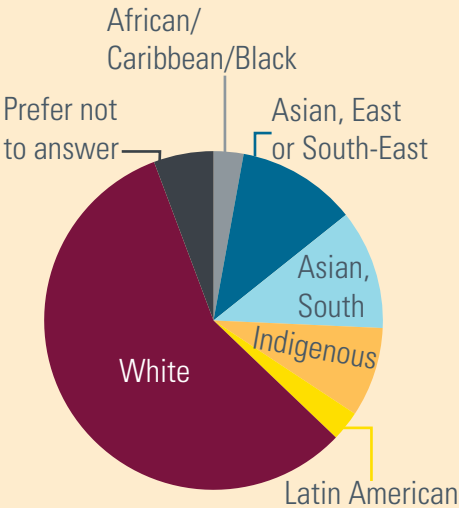
Box 2: Profile of panellists

Four citizen panels were convened virtually, engaging a total of **35 diverse citizens** – in terms of age, gender, ethnocultural background and socio-economic status – from across Canada. Three panels were conducted in English and one in French.

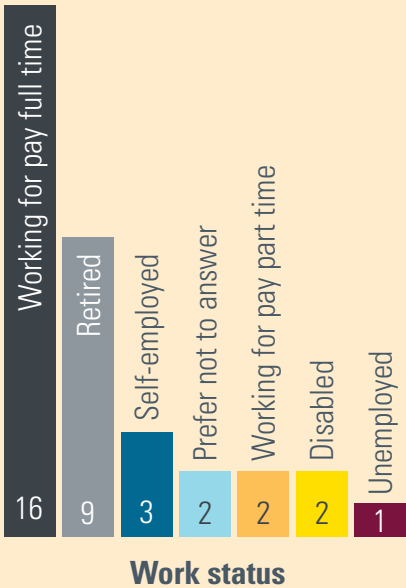
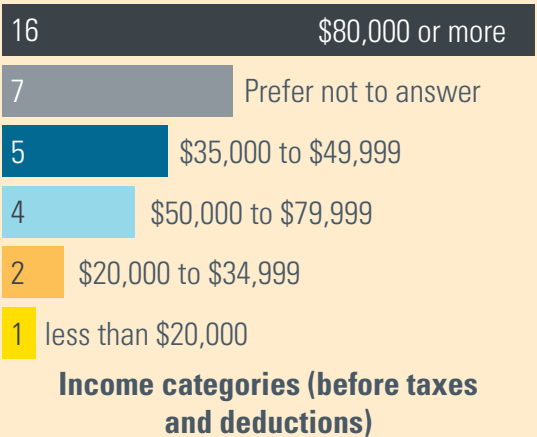
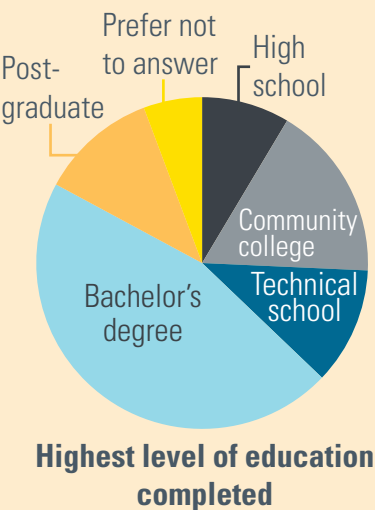
More specifically:



Gender



Racial and ethnic identity



***Note that the graphs are not connected, and thus each graph is colored independently.*

Discussing solutions

After discussing the challenges, panellists were invited to reflect on three solutions to support the use of remote-monitoring technologies to enable people to stay in their homes in Canada. The proposed solutions were:

1. supporting people, their caregivers and their families to use remote-monitoring technologies
2. supporting organizations and providers to use remote-monitoring technologies
3. helping the system to learn and improve rapidly to support the use of remote-monitoring technologies.

A few panellists suggested that the sequencing of solutions should be revised. We should start with solution 3 (adopting a rapid-learning system approach and address all system-level challenges), then pursue solution 2 (enabling organizations and providers to use and adopt remote-monitoring technologies), and finally focus on solution 1 (supporting people, their caregivers and their families to use and adopt remote-monitoring technologies). These panellists were concerned about creating expectations that could not be met if the providers, organizations and systems were not ready.

Whenever possible, we describe areas of common ground and differences of opinions among panellists, and (where possible) identify the values underlying different positions.

Solution 1. Supporting people, their caregivers and their families to use remote-monitoring technologies

This solution is aimed at providing support to older adults, their caregivers and their families to use remote-monitoring technologies. This solution could include ideas like:

- financial support to use these technologies (for example, an annual allowance for broadband internet access)
- activities to improve your knowledge, skills and behaviours, such as:
 - activities to provide you with information or education about remote-monitoring technologies
 - activities to help you change your behaviours towards remote-monitoring technologies
 - activities to develop your skills to use remote-monitoring technologies
 - activities to communicate with your care team and make decisions about remote-monitoring technologies (for example, identifying your health and social needs, discussing the potential benefits of remote-monitoring technologies, and supporting you to navigate the technological options).

During the discussion about this solution, eight value-related themes emerged:



Fairness



Collaboration
(among users, providers and
organizations delivering care)



Privacy



Adaptive



Trusting relationships



Competence



Collaboration
(among peers)



Empowerment

Discussing solutions (cont'd)

The first values-related theme (fairness) emphasized that access to remote-monitoring technologies should be based on needs, not the ability to pay of users (thus emphasizing the need for financial support).

The second, third, fourth and fifth values-related themes (collaboration, privacy, adaptive and trusting relationship) highlighted that older adults, their caregivers, their families and the care team should be proactively engaged in advance care planning conversations in the context of aging in place. These conversations could help to identify goals of care (meaning their values, wishes, and goals in the context of aging in place). A bundle of remote-monitoring technologies could be proposed to meet these goals of care. Each technology could be mapped along a continuum of privacy to ensure it reflects the user's values and wishes (for example, technologies having limited impact on privacy versus those more intrusive). A consent process should be put in place to ensure that users are fully informed about the implications of each technology. These conversations and decisions should be revisited over time and when there is a change in the illness trajectories.

The sixth and seventh values-related themes (competence and collaboration among peers) emerged when panellists suggested that potential users would need private onboarding sessions offered by staff who are competent with these technologies. Additional training opportunities should be offered to users, possibly in group settings and with "super-users."

The last values-related theme (empowerment) focused on the need to raise awareness among the public about remote-monitoring technologies and enable them to 'demand' such technologies. Strategies initially proposed in the citizen brief mostly aimed to "push" these technologies instead of relying on strategies to create a demand for them ("user-pull") and empower users. In addition, panellists highlighted the need to raise awareness among potential users about these technologies that could help them to age in place (for example, focusing on the various federations of older adults and retirees across Canada). Lastly, panellists emphasized the need to think carefully about the "branding" of these technologies since it may have an impact on social acceptance and the identity of users (for example, focusing on how these technologies will help users achieve their wishes and goals).

Discussing solutions (cont'd)

Solution 2. Supporting organizations and providers to use remote-monitoring technologies

This solution aimed to support organizations delivering care and providers to use remote-monitoring technologies. This solution could include ideas like:

- engaging users, their caregivers, and their families in co-designing remote-monitoring technologies, along with organizations, providers, the industry and other key stakeholders
- activities to improve the knowledge, skills and behaviours of providers, such as:
 - providing educational material
 - hosting educational meetings
 - relying on local opinion leader (or champion)
 - conducting audit and feedback
 - providing reminders and prompts.

Four values-related themes emerged during the discussion about solution 2:



Collaboration (among patients, providers and organizations within the health system)



Competence



Fairness



Innovation

The first values-related theme was collaboration. Panellists were favourable to engaging users, their caregivers, and their families along with providers/organization in co-designing remote-monitoring programs, but a few questioned whether it could slow down the innovation process.

The second values-related theme focused on competence. Panellists indicated that curriculums should now include virtual care, and continuous learning activities should be created to improve the knowledge, skills and behaviours of providers towards remote-monitoring technologies. They also called for mechanisms (such as audit and feedback) to “ensure that the knowledge and skills are synchronized so that all care providers know what they need.” Panellists also acknowledged the need to re-examine scopes of practice to ensure that the roles and responsibilities of different providers are clear. Lastly, many panellists wondered what role personal-support workers (PSWs) could play to support the use of remote-monitoring technologies since they are regularly in the users’ homes.

The third and fourth values-related themes were fairness and innovation. Panellists indicated that financial incentives may be required to support providers and organizations in adopting innovation like remote-monitoring technologies. As one panellist said: “This is extra work somebody is going to need to take on. Doctors, nurse practitioners, and clinical leads are already overburdened.” Some panellists pointed out that this was particularly important for non-governmental organizations (NGOs) delivering home and community care. As another panellist said: “NGOs are often the last to get funding for technology. They need to have a seat at this table early on because a lot of NGOs are who are actually going to be implementing and supporting vulnerable groups.”

Discussing solutions (cont'd)

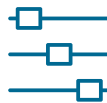
Solution 3. Helping the system to learn and improve rapidly to support the use of remote-monitoring technologies

This solution aimed to support health and social systems to adopt an approach to learn and improve rapidly (also called 'rapid-learning systems'). This could help to support the development, evaluation and implementation of remote-monitoring technologies in Canada (while being responsive to health and social needs of older adults, their caregivers and their families).

Six values-related themes emerged during the discussion about solution 3:



Empowerment



Transformative change
should be based on users'
values and preferences



Transformative change
should be based on
data and evidence



Continuously
improving (quality)



Fairness (equity)
across jurisdictions



Collaboration across
jurisdictions

The first values-related theme related to empowerment. Panellists suggested that we should empower the public in order to advocate for 'aging in place' and the use of remote-monitoring technologies.

The second values-related theme indicated that such transformative change should be based on users' values and preferences. Indeed, users should guide the development, evaluation and implementation of remote-monitoring technologies. To achieve this, panellists called for communication channels to rapidly communicate their concerns, challenges or ideas (via phone lines, emails, questionnaires/surveys or user panels).

The third values-related theme indicated that such transformative change should also be based on data and evidence. Panellists supported the implementation of robust pilot projects across multiple demographics, and with an emphasis on rural/remote and vulnerable communities (to build the body of evidence in real-world contexts).

The fourth, fifth and sixth values-related themes highlighted that a rapid-learning and improvement approach could support continuous improvement, but also support greater fairness and collaboration across jurisdictions do deploy remote-monitoring technologies. Panellists proposed the creation of a network of regional 'hubs' that could support collaboration across jurisdictions and foster rapid learning and improvement (which was perceived as especially important for provinces and territories that may be lacking capacity and digital infrastructure).

The fourth, fifth and sixth values-related themes highlighted that a rapid-learning and improvement approach could support continuous improvement, but also support greater fairness and collaboration across jurisdictions do deploy remote-monitoring technologies. Panellists proposed the creation of a network of regional 'hubs' that could support collaboration across jurisdictions and foster rapid learning and improvement (which was perceived as especially important for provinces and territories that may be lacking capacity and digital infrastructure).

Identifying barriers and windows of opportunity to moving forward

After discussing possible solutions, panellists examined potential barriers and windows of opportunity for moving forward.

The discussion generally focused on three key barriers to bring about change:



Not all Canadians may be receptive to using remote-monitoring technologies (for example, concerns about the perceived loss of privacy)



Some providers and organizations may also resist change because they currently benefit from the status quo



Politics often get in the way of addressing healthcare crises even though everyone agrees about the solutions

Panellists also identified key windows of opportunity to move forward, notably:



There are “tremendous opportunities” offered by these technologies to ease pressure on health systems and address long-standing issues (for example, remote-monitoring technologies could improve timely access to care and help to provide optimal care to an aging population)



While some older adults may be resistant to these technologies, more and more people are becoming familiar with such technologies (and we may see a major generational shift in coming years)



Pan-Canadian organizations like Canada Health Infoway could be leveraged and help collaboration



The emergence of remote-monitoring technologies offers economic development opportunities (for example, supporting the development of Canadian industry and new jobs)

Acknowledgments

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