

Dialogue Summary

Using Remote-monitoring and Associated Technologies to Enable People to Stay in their Homes or Existing Level of Care Settings in Canada

6 & 7 December 2022



HEALTH FORUM

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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.

Authors

François-Pierre Gauvin, PhD, Senior Scientific Lead, Citizen Engagement and Evidence Curation, McMaster Health Forum

Wilson MG, PhD, Assistant Director, McMaster Health Forum, and Associate Professor, McMaster University

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Conflict of interest

The authors declare that they have no professional or commercial interests relevant to the dialogue summary. The funders reviewed a draft dialogue summary, but the authors had final decision-making authority about what appeared in the dialogue summary.

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Dialogue

The stakeholder dialogue about using remote-monitoring and associated technologies to enable people to stay in their homes or existing level of care settings in Canada was held virtually on 6-7 December 2022 and hosted by the McMaster Health Forum.

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SUMMARY OF THE DIALOGUE

We convened a virtual stakeholder dialogue on 6 and 7 December 2022, which brought together 18 purposefully selected participants who are engaged in the use of remote-monitoring and associated technologies to enable people to stay in their homes or existing level of care settings in Canada. Participants examined the problem, elements of a potentially comprehensive approach for addressing it, and key implementation considerations.

Throughout the deliberations, participants indicated that remote-monitoring technologies appear promising to address long-standing challenges facing health systems and to “modernize the circle of care.” Yet, they acknowledged that several challenges must be addressed before we can harness these technologies. In addition to the features of the problem articulated in the evidence brief, participants indicated that greater attention should be given to the following four challenges: 1) the complexity of the issue is under-appreciated (e.g., ethical, equity and regulatory considerations have not been fully unpacked yet); 2) remote-patient monitoring is not recognized yet as a ‘health-system function’; 3) remote-monitoring technologies may need to be re-branded to improve social acceptability; and 4) it is difficult to align all key stakeholders (including health-system leaders, citizens, innovators, and the industry).

There was broad agreement about the importance of the three elements of a potentially comprehensive approach to address the problems included in the evidence brief. Participants highlighted the need to help clients and families get excited about remote-monitoring technologies, and conduct person-centred and empowerment-based assessments using a fun and engaging lifestyle technology perspective (element 1). Participants also discussed the need to use remote-monitoring technologies to proactively drive modernized approaches in care teams and pathways, by enabling clinicians, interprofessional teams and organizations to use remote-monitoring technologies to better assess and support functions that are important to the client, rather than focusing on pathology and dysfunction (element 2). Lastly, rapid learning and improvement cycles were emphasized as a way to develop and continually refine approaches that address the complexities, uncertainties, and other considerations of remote-monitoring technologies (element 3).

In discussing implementation considerations, participants identified four key barriers to moving forward, notably: 1) activities in the field of remote-monitoring technologies are very fragmented across the country; 2) there is a lack of leadership to advance the types of priorities identified; 3) there is no comprehensive framework to support health-system leaders in implementing such transformative change; and 4) elected officials and system leaders are often risk averse.

Having discussed barriers, participants identified several features of the current landscape that could collectively create a window of opportunity to move forward, including: 1) public/consumers have an appetite for remote-monitoring technologies; 2) many resources can be leveraged; 3) advances in artificial intelligence (AI) can help to deal with the overwhelming amount of data that will be generated by remote-monitoring technologies; and 4) health-technology assessment agencies (like the Canadian Agency for Drugs and Technologies in Health) can be leveraged to assess new and emerging technologies, and identify what has worked in other countries.

For next steps, participants underscored the need for several actions, notably: 1) examining how the mission and priorities of the AGE-WELL network (as well as those of funding agencies and pan-Canadian health organizations) could help to advance the priorities identified; 2) creating a space to engage key stakeholders to work towards a unified agenda; 3) developing technology accelerators and incubators to support small/medium-sized businesses in the country; 4) empowering the public and providers to drive the narrative and advocate for the use of remote-monitoring technologies; 5) developing and continually updating an evidence base to inform policy and coverage decisions; and 6) promoting the use of an equity lens to advance the development, implementation and evaluation of remote-monitoring technologies.

SUMMARIES OF THE FOUR DELIBERATIONS

Throughout the deliberations, participants indicated that remote-monitoring technologies have enormous potential to address long-standing challenges facing health systems (notably providing optimal care to an aging population and addressing the declining availability of support from caregivers for many) and to “modernize the circle of care.” Such technologies can provide a comprehensive portrait (sometimes in real time) of the health and well-being of older patients. As one participant said: “Older adults often cover up that they are suffering. (...) Providers are often making decisions without reliable information.”

DELIBERATION ABOUT THE PROBLEM

The deliberation focused on the most important challenges in using remote-monitoring and associated technologies to enable people to stay in their homes or existing level of care settings in Canada.

In addition to the features of the problem articulated in the evidence brief, participants indicated that greater attention should be given to the following challenges:

- the complexity of the issue is under-appreciated (e.g., ethical, equity and regulatory considerations have not been fully unpacked yet)
- remote patient monitoring is not recognized yet as a ‘health-system function’
- remote-monitoring technologies may need to be re-branded to improve social acceptability
- it is difficult to align all key stakeholders (including health-system leaders, citizens, innovators and industry).

We review each of these challenges in turn below.

The complexity of the issue is under-appreciated

The adoption and deployment of remote-monitoring technologies is complex. However, several dialogue participants argued that this complexity is often under-appreciated or “swept under the rug”, which can lead to considering approaches that do not account for this complexity either in terms of what’s needed or where to start.

Box 1: Background to the stakeholder dialogue

The virtual stakeholder dialogue was convened in order to support a full discussion of relevant considerations (including research evidence) about a high-priority issue in order to inform action. Key features of the dialogue were:

- 1) it addressed an issue currently being faced in Canada
- 2) it focused on different features of the problem, including (where possible) how it affects particular groups
- 3) it focused on three elements of a potentially comprehensive approach for addressing the issue
- 4) it was informed by a pre-circulated evidence brief that mobilized both global and local research evidence about the problem, the three elements, and key implementation considerations
- 5) it was informed by a discussion about the full range of factors that can inform how to approach the problem and possible elements of an approach to addressing it
- 6) it brought together many parties who would be involved in or affected by future decisions related to the issue
- 7) it ensured fair representation among policymakers, stakeholders and researchers
- 8) it engaged a facilitator to assist with the deliberations
- 9) it allowed for frank, off-the-record deliberations by following the Chatham House rule: “Participants are free to use the information received during the meeting, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed”
- 10) it did not aim for consensus.

We did not aim for consensus because coming to agreement about commitments to a particular way forward can preclude identifying broad areas of agreement and understanding the reasons for and implications of specific points of disagreement, as well as because even senior health-system leaders typically need to engage elected officials, boards of directors and others about detailed commitments.

Participants’ views and experiences and the tacit knowledge they brought to the issues at hand were key inputs to the dialogue. The dialogue was designed to spark insights – insights that can only come about when all of those who will be involved in or affected by future decisions about the issue can work through it together. The dialogue was also designed to generate action by those who participate in the dialogue, and by those who review the dialogue summary and the video interviews with dialogue participants.

According to the participants, the complexity of the issue is explained by the following:

- the scope of the issue is quite large (and gets even larger since it relates to virtual care more broadly)
- there are many adoption challenges (e.g., digital infrastructure, health-system infrastructure, who owns it, how to remunerate providers) and other uncertainties (including who is the client, who consents to collect and use information, who benefits from remote-monitoring technologies, who is making the trade-offs, what's most effective/beneficial and for whom, etc.)
- it requires considering how to connect remote-monitoring technologies to heterogeneous and complex populations (e.g., people with multimorbidity and cognitive impairments) who are often not fully accounted for
- ethical, equity and regulatory considerations of remote-monitoring technologies have not been fully unpacked yet.

Regarding the last point, participants talked about how:

- privacy needs to be nuanced and re-focused on what really matters for people and to what end (e.g., monitoring their health and well-being to provide optimal care versus systematically gathering data that can be used by other parties such as insurance companies)
- ongoing consent is required (from both clients and providers), which is made particularly challenging for those with cognitive impairments, especially as their impairments worsen over time
- remote-monitoring technologies should ultimately aim to reduce inequities, but a few participants acknowledge that the digital divide may be widened in the early stages (as one participant said: "It's never fair at first. You always have early adopters. We need to push this with early adopters.")
- regulations about remote-monitoring technologies can be approached differently (e.g., privacy issues fall under provincial jurisdiction, while telecommunication issues fall under federal jurisdiction).

Participants indicated that it is easy for health-system leaders to get slowed down by all these adoption challenges and uncertainties, rather than starting with simple approaches and then expanding, evaluating and adjusting over time.

Remote patient monitoring is not recognized yet as a 'health-system function'

The second challenge that emerged during the deliberation is that remote patient monitoring is not recognized yet as a 'health-system function.' Therefore, overseeing and managing remote-monitoring technologies is not someone's job yet, which limits the ability to scale up its use.

As one participant said: "If it's a function that we believe in, it will require a shift or expanded scope so that clinicians [physicians, nurses, physical therapists, or occupational therapists] see it as part of their job."

Remote-monitoring technologies may need to be re-branded to improve social acceptability

The idea of remotely monitoring people raised concerns and fears among participants in the citizen panels and garnered attention among dialogue participants as well. Panellists flagged that the idea of remotely monitoring people gives the impression that everyone would be "chipped" and monitored by "Big Brother." Furthermore, panellists in the French panel said that the commonly used term "télésurveillance" could reinforce these concerns and fears, particularly among historically disadvantaged populations. As a result, dialogue participants agreed with panellists about the need for a more positive branding of remote-monitoring technologies (for example, lifestyle technologies).

It is difficult to align all key stakeholders (including health-system leaders, professional organizations, citizens, innovators and industry)

Remote-monitoring technologies are developing at a rapid pace, and they are making their way into homes in various ways (e.g., early adopters who are buying technologies available on the market or older adults being part of remote patient-monitoring programs). However, the uncoordinated development and deployment of these technologies may exacerbate problems (e.g., the lack of a common vision about the purposes of these technologies and the lack of interoperability of these technologies).

In addition, several participants pointed out that it was difficult to align the agendas of all key stakeholders (including health-system leaders, citizens, innovators, and the industry). However, they argued it was essential to overcome this challenge to ensure that remote-monitoring technologies are developed and introduced in ways that optimize population-level benefits.

**DELIBERATION ABOUT ELEMENTS OF A POTENTIALLY COMPREHENSIVE
APPROACH TO ADDRESS THE PROBLEM**

Element 1 - Supporting people, their caregivers and their families to use and adopt remote-monitoring technologies and associated technologies

The focus of element 1 was to support people, their caregivers and their families to use and adopt remote-monitoring technologies. This element was framed in the evidence brief as potentially including efforts to:

- proactively identify people who could benefit from remote-monitoring technologies
- provide financial support to use and ensure the maintenance of these technologies (e.g., annual allowance to cover broadband internet, costs of hardware/software, and tech support)
- adopt implementation strategies targeting patients, families and caregivers, such as:
 - information or education provision
 - behaviour-change support
 - skills and competencies development
 - (personal) support
 - communication and decision-making facilitation (e.g., identifying their health and social needs, raising awareness about the potential of remote-monitoring technologies, and supporting them to navigate their technological options)
 - system participation (already covered in elements 2 and 3).

The deliberation about this element initially focused on the importance of helping clients and families get excited about remote-monitoring technologies. To do so, participants indicated that there is a need to start with person-centred and empowerment-based assessments using a fun and engaging lifestyle technology perspective. One participant suggested that this could be framed using a “did you know” approach and/or what they feel they need to go farther and faster in assessing needs. Another suggestion was to follow this with a goals-focused discussion that would identify what an individual wishes they could do (or not have to do). This was suggested as a way to help to “reverse-engineer their fears”, and to use as part of a fuller personal audit to determine what technologies they already have in place and what gaps can be filled with minimal investment.

To help people navigate among the different remote-monitoring technologies and funding available across the country, it was suggested that a portal may be useful (such as the [AccessATCanada](#) portal for assistive technologies).

Element 2 - Enabling organizations and providers to use and adopt remote-monitoring and associated technologies

Element 2 focused on behavioural and implementation strategies targeting organizations and providers to ensure that the technologies get to the people who need them. This element was framed in the evidence brief as potentially including efforts for:

- engaging patients, caregivers and families in co-designing programs and services (from ideation to implementation) along with organizations, providers, the industry and other key stakeholders
- adopting organization-targeted implementation strategies
- adopting provider-targeted implementation strategies, such as:
 - educational material
 - educational meeting
 - educational outreach visit
 - local opinion leader
 - local consensus process
 - peer review
 - audit and feedback
 - reminder and prompts
 - tailored intervention
 - patient-mediated intervention
 - multi-faceted intervention.

The deliberation about this element initially focused on the need to use remote-monitoring technologies to proactively drive modernized approaches in care teams and pathways. These technologies could enable clinicians, interprofessional teams and organizations to better assess and support functions that are important to their clients, rather than focusing on pathology and dysfunction (which is where there is a disproportionate amount of focus in current care approaches).

Participants discussed care models that were supported by remote-monitoring technologies. For example, one participant highlighted a model where interprofessional teams and organizations could integrate updates to audits of older adults' capacity, function and goals over time. As part of this, remote-monitoring technologies can be deployed to support and inform the care plan, and then adjusted as needed based on information collected and analyzed.

Another participant discussed another promising model that could be adapted and adopted where remote-monitoring technologies are embedded in community-based settings such as pharmacies with trusted and available providers (e.g., pharmacists and nurse practitioners providing clinical care in pharmacies). This connection to trusted community-based settings could leverage remote-monitoring technologies to reach people who may not otherwise be connected to care (thereby contributing to addressing the pressing health human resources crisis in Canada).

Participants also deliberated about the need to allocate monitoring functions to the most appropriate care providers on a care team and/or regional authority/population-based model. Several participants questioned whether the monitoring should be led by family physicians. In fact, participants generally agreed that occupational therapists and physiotherapists are often best positioned to do home assessments and functional assessments. Therefore, occupational therapists and physiotherapists could be “the boots on the ground” for the care team with an “escalation pathway” that engages other clinicians as needed, and based on the nature of the challenges faced by a client.

Element 3 - Adopting a rapid-learning system approach to support the development, implementation, and evaluation of remote-monitoring technologies

The focus of element 3 was on adopting a rapid-learning system approach to support the development, implementation and evaluation of remote-monitoring technologies in Canada.

Participants generally agreed that rapid learning and improvement cycles are needed to develop and continually refine approaches that address the complexities/uncertainties/equity considerations as we go.

Several participants emphasized the need to run parallel innovations. To manage high uncertainty with any given care model in this field, there is a need to adopt several innovative models of care in parallel, evaluate to see what's promising and/or affordable, and then prioritize and pivot at short intervals. Participants noted that this is challenging from a leadership perspective, but it will enable systems to continually innovate and go farther and faster in identifying what innovations can and should be scaled up.

DELIBERATION ABOUT IMPLEMENTATION CONSIDERATIONS

In discussing implementation considerations, participants identified four key barriers to moving forward:

- activities in the field of remote-monitoring technologies are very fragmented across the country
- there is a lack of leadership to advance the types of priorities identified during deliberations about the elements (as one participant said: "If we don't have a champion, then stakeholders across the field won't be knowledgeable and confident in advancing the field.")
- there is no comprehensive framework to support health-system leaders in implementing such transformative change
- elected officials and system leaders are often risk averse.

Participants talked at length about the last point, particularly the need to overcome this risk aversion and be more open to learn from both our successes and failures. One participant described a remote patient-monitoring project for COPD which failed on every metric, was costly and required a high staff-to-patient ratio. However, the participant noted that the project created an opportunity to find positive elements and adjust to find something that could be successfully adapted later in the innovation cycle.

Having discussed barriers, participants identified four key features of the current landscape that could collectively create a window of opportunity:

- public/consumers having an appetite for remote-monitoring technologies
- existence of many resources that can be leveraged (remote-monitoring technologies can be used to enable transformation in care models and pathways to make the most of health human resources and system resources)
- advances in artificial intelligence (AI) that can help to deal with the overwhelming amount of data that will be generated by remote-monitoring technologies
- leveraging health technology assessment agencies (like the Canadian Agency for Drugs and Technologies in Health) to assess new and emerging technologies, and identify what has worked in other countries.
 - One participant noted the ASSESS Project, which supports innovators to understand the business case for further development of technologies (like remote-monitoring technologies) and uses a [global software platform](#) to connect innovators to experts in HTA.

DELIBERATION ABOUT NEXT STEPS FOR DIFFERENT CONSTITUENCIES

In the deliberations about next steps, participants outlined what they would bring back to their respective constituencies and how their suggestions could work to advance the proposed solutions. Together, participants prioritized the following actions:

- examine how the mission and priorities of the AGE-WELL network (as well as those of funding agencies and pan-Canadian health organizations) could help to advance the priorities identified
- create a space to engage key stakeholders from many sectors (including health-system leaders, professional organizations, citizens, innovators, and the industry) to work towards a unified agenda across Canada:
 - one participant highlighted the need to push stakeholders to think about how remote-monitoring technologies can address current health-system challenges, but also to think prospectively about the system we want in the future: “We need to [think about remote-monitoring technologies] for the system we have and for the one we hope to have.”
- support technology accelerators and incubators to support small/medium-sized businesses across the country (e.g., the Innovation Launchpad in Nova Scotia and living labs in Alberta):
 - these approaches could provide some defined parameters for a venture company to come in, test and pilot a technology for six to eight weeks, link with clinical teams (with support to match clinical teams with the company and pay for time) and then support development of a business case (but with no guarantee of funding)
 - one participant also suggested that we “take a ‘million-flowers-to-bloom’ approach to see which innovations thrive”
- empower the public and providers to drive the narrative and advocate for the use of remote-monitoring technologies
- develop and continually update the evidence base to inform policy and coverage decisions regarding remote-monitoring technologies with one participant suggesting advocacy for the creation of a Canadian task force, and start implementing Canadian adapted solutions
- promote the use of an equity lens to advance the development, implementation and evaluation of remote-monitoring technologies.



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>> Contact us

1280 Main St. West, MML-417
Hamilton, ON, Canada L8S 4L6
+1.905.525.9140 x 22121
forum@mcmaster.ca

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