Panel Summary

Identifying and Harnessing the Potential of Technology in Long-term Care Settings in Canada

15 January 2021

McMaster University | HEALTH FORUM

EVIDENCE >> INSIGHT >> ACTION

McMaster Health Forum

The McMaster Health Forum's goal is to generate action on the pressing health-system issues of our time, based on the best available research evidence, as well as citizen values and stakeholder insights. We aim to strengthen health systems – locally, nationally, and internationally – and get the right programs, services and drugs to the people who need them.

About citizen panels

A citizen panel is an innovative way to seek public input on high-priority issues. Each panel brings together 14-16 citizens from all walks of life. Panel members share their ideas and experiences on an issue, and learn from research evidence and from the views of others. A citizen panel can be used to elicit the values that citizens feel should inform future decisions about an issue, as well as to reveal new understandings about an issue and spark insights about how it should be addressed.

About this summary

In January 2021, the McMaster Health Forum convened four citizen panels on identifying and harnessing the potential of technology in long-term care settings in Canada. This summary highlights the views and experiences of panellists about:

- the underlying problem;
- three possible elements of an approach to addressing the problem; and
- potential barriers and facilitators to implement these elements.

The citizen panel 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.

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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) – on 8 January 2021 (with anglophone panellists from British Columbia, Alberta, Saskatchewan and Manitoba), 11 January 2021 (with anglophone panellists from Ontario and Quebec), 14 January 2021 (with anglophone panellists from New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland), and 15 January 2021 (with francophone panellists from Ontario, Quebec and New Brunswick). The panellists had experiences with long-term care as caregivers or as family members of residents of long-term care homes. Panellists were provided with a plain-language version of the evidence brief prior to the citizen panels, which served as an input into citizens' deliberations.

During the deliberation about the problem, citizens were asked to share what they perceived to be the main challenges to identifying and harnessing the potential of technology in long-term care settings. Panellists identified six important challenges: 1) fundamental issues with long-term care need to be addressed to be able to identify and harness technologies; 2) long-term care homes do not take advantage of technologies; 3) there are concerns that relying more on technology could reduce human contact; 4) there is a persistent myth that older adults are not interested or unable to use technology; 5) the uptake of technologies (if not supported across the system) could further increase inequity in the long-term care sector; and 6) community resources and infrastructure are either not optimally leveraged or are lacking.

In discussing the elements of a potentially comprehensive approach to address these challenges, three key themes emerged: 1) there is a need for national standards and guidelines for enhancing long-term care that need to be met provincially (and a reflection about how technologies could help to meet these standards and guidelines); 2) the scope and sequencing of the elements could be revised (for example, co-design approaches should also be used to plan the renovation of existing long-term care homes and the building of new ones; and the context of long-term care homes should consider not only the physical/technological environment, but also the broader social, cultural and policy environments that can support the adoption of appropriate technologies); and 3) innovation was a recurrent theme, but some panellists emphasized the need for incremental innovations, while others advocated for more radical innovation.

Panellists identified the need for systemic (and complex) changes to support the renewal of the long-term care sector as one of the key barriers. In discussing windows of opportunity, panellists emphasized the COVID-19 pandemic, which has created a sense of urgency to drive change in the long-term care sector. In addition, the general public and key stakeholders have called for a new vision, national standards and an innovation agenda for the long-term care sector.

"Quality of life has gone down substantially during the pandemic. People in these facilities are quite lonely. A year of lockdown is a long time."

Discussing the problem:

What are the most important challenges to harnessing the potential of technology?

During the deliberation about the problem, panellists were asked to share what they perceived to be the main challenges to identifying and harnessing the potential of technology in long-term care settings. Panellists identified six important challenges:

- fundamental issues with long-term care need to be addressed to be able to identify and harness technologies;
- long-term care homes do not take advantage of technologies;
- there are concerns that relying more on technology could reduce human contact;
- there is a persistent myth that older adults are not interested or able to use technology;
- the uptake of technologies (if not supported across the system) could further increase inequity in the long-term care sector; and
- community resources and infrastructure are either not optimally leveraged or are lacking.

We review each of these challenges in turn below

Fundamental issues with long-term care need to be addressed to be able to identify and harness technologies

Three broad challenges with the long-term sector in general emerged across the panels that were viewed as needing to be addressed to be able to identify and harness technologies: 1) many older adults do not want to end up in a long-term care home; 2) social isolation and loneliness are common in long-term care homes; and 3) the long-term care sector is underfunded.

First, several panellists indicated that many older adults do not want to end up in a long-term care home. This sentiment may have been exacerbated by what some referred to as the "appalling conditions" of residents during the COVID-19 pandemic.

These panellists emphasized that older adults wish to stay at home for as long as possible. Therefore, technologies should ideally help to keep people in their home for as long as possible to reduce admissions to long-term care homes. Ultimately, this was seen as a way to improve the quality of life of older adults, while reducing the burden on health systems.

Box 1: Key features of the citizen panels

The virtual citizen panels about identifying and harnessing the potential of technology in long-term care settings in Canada had the following 11 features:

1. it addressed a high-priority issue in Canada;
2. it provided an opportunity to discuss different features of the problem;
3. it provided an opportunity to discuss three options for addressing the problem;
4. it provided an opportunity to discuss key implementation considerations (for example, barriers);
5. it provided an opportunity to talk about who might do what differently;
6. it was informed by a pre-circulated, plain-language brief;
7. it involved a facilitator to assist with the discussions;
8. it brought together citizens affected by the problem or by future decisions related to the problem;
9. it aimed for fair representation among the diversity of citizens involved in or affected by the problem;
10. it aimed for open and frank discussions that will preserve the anonymity of participants; and
11. it aimed to find both common ground and differences of opinions.

Second, panellists discussed at great length the social isolation and loneliness as a major issue for long-term care residents, which has been made much worse during the COVID-19 pandemic (for example, due to lockdowns, visitor restrictions, mandatory quarantines). As one panellist said, it had a terrible impact on the quality of life of residents: "Quality of life has gone down substantially during the pandemic. People in these facilities are quite lonely. A year of lockdown is a long time." Several panellists expressed feeling particularly helpless during the pandemic and indicated that it was critical to find ways to engage residents and enhance their quality of life.

Lastly, panellists generally agreed that the long-term care sector is underfunded, which affects the quality of life for residents and staff. They indicated that the needs of seniors and those in long-term care homes in particular seem to be consistently left behind in society.

This has resulted in consistent neglect that has contributed to the long-standing issues that have come to light so prominently during the COVID-19 pandemic, including:
- understaffing (driven by years of underfunding and limited resources, and low pay leading to high staff turnover);
- overcrowding and poor conditions;
- lack of recreational activities that could address social isolation and loneliness;
- infrastructure deficits (which are limiting factors both for overall quality of life of residents and the adoption of technologies that can further enhance care and quality of life); and

> **Box 2: Profile of panellists**
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> The citizen panel aimed for fair representation among the diversity of citizens likely to be affected by the problem. We provide below a brief profile of panellists:
>
> - **How many panellists?**
>   43
>
> - **How old were they?**
>   18-24 (3%), 25-44 (21%), 45-64 (31%), 65 and older (46%)
>
> - **Were they men, or women?**
>   men (56%) and women (44%)
>
> - **What was the educational level of panellists?**
>   5% completed high school, 15% completed community college, 10% completed technical school, 36% completed a bachelor's degree, and 33% completed a post-graduate training or professional degree
>
> - **What was the work status of panellists?** 3% self-employed, 28% working full-time, 8% working part-time, 5% unemployed, 53% retired, 3% homemakers, and 3% disabled.
>
> - **What was the income level of panellists?** 3% earned less than $20,000, 18% between $20,000 and $40,000, 20% between $40,000 and $60,000, 13% between $60,000 and $80,000, 28% more than $80,000, and 20% preferred not to answer
>
> - **How were they recruited?** Selected based on explicit criteria from the AskingCanadians™ panel

- focus on the physical health and mobility of residents given limited resources and hours per resident (and thus neglecting important mental health and social needs).

Panellists highlighted that harnessing the potential of technologies will require investment to get the technologies, resources needed to train staff, a tech person in each long-term care home to (at least initially) support adoption, plus any changes to infrastructure in any given long-term care home.

Long-term care homes do not take advantage of technologies

Panellists generally had positive views about the benefits of technologies to improve the quality of life of residents, while at the same time improving communication (with families, caregivers, operators and staff of long-term care homes, and other care providers) and improving the quality of care.

More specifically, they emphasized the need to better harness the benefits of technologies in the following areas:

- **improving social engagement** (for example, communication with caregivers and family outside long-term care homes, as well as social engagement with other residents such as live-streaming cultural events or online programming from within or outside the long-term care home [for example, from public libraries] so that residents can still feel a part of their community);
- **overcoming impairments** (for example, voice activation technology could be particularly helpful for residents to help overcome the functional impairments that many live with that make using touch-based technology difficult);
- **bridging cultural and linguistic barriers** between residents and staff;
- **supporting staff training**;
- **helping caregivers and families access information about residents** (for example, their health records, as well as brief summaries of daily activities so that caregivers can be aware of any emerging issues and can address the current limited ability for caregivers and families to know what's happening and where they may need to provide support);
- **improving transparency and accountability** of long-term care homes (although some panellists pointed out that staff may view some technologies as surveillance, which could be detrimental to providing quality care); and
- **improving resident care and safety**.

The need to improve social engagement was a recurring theme across all panels. Several panellists pointed out that commonly used technologies (for example, televisions) could be

harnessed in lieu of (at least temporarily) infrastructure deficits. By networking televisions, long-term care homes could support social interaction among residents, especially during times of isolation during the pandemic.

Another key recurring theme was the need to improve resident care and safety. Indeed, panellists emphasized the importance of prioritizing technologies that will help staff. They expected that better harnessing technologies could help staff take tasks off their plate and enable them to spend more time with residents.

There are concerns that relying more on technology could reduce human contact

While technology could have many benefits, many expressed concern that its adoption could be challenging given the staff time and resources that might be needed, which could further take away from in-person care and support.

Several panellists indicated that there is a need to be careful that technology (like socially assistive robots, tablets and other devices) do not replace people, and that staff do not spend more time supporting the use of technology as opposed to providing direct care.

Instead, it was emphasized that technologies should be adopted that ease certain tasks for staff so that they can provide more direct care, and should also foster greater human interactions with other residents, family members, and the rest of the community.

There is a persistent myth that older adults are not interested in or able to use technology

Panellists highlighted the persistent myth that older adults are not interested in or able to use technology. Several insisted that many residents could use technologies with some basic support (particularly those that could help them communicate, break down the cycle of social isolation, and provide entertainment). However, they perceived that many technologies have not been developed to meet the specific needs of residents (particularly those with physical and cognitive impairments) and long-term care staff.

Several panellists indicated the need to adopt a long-term vision for long-term care (and technology use in long-term care homes) aligned with the expectations of the next generation of residents, which is likely to view the use of technology as a fundamental part of long-term care.

The uptake of technologies (if not supported across the system) could further increase inequity in the long-term care sector

Some panellists also indicated that if access to technology remained a challenge, it could exacerbate health inequities. Some long-term care homes and residents may not be able to afford certain technologies, and thus may not be able to benefit from them without specific policy action.

For example, panellists pointed out that technologies can support communication and recreation by residents, but that many cannot afford smart phones, tablets and other devices as well as staff time to support their use, with many long-term care homes often only having a TV in a communal room and no Wi-Fi available. Without basic standards (and support to achieve these standards), most panellists highlighted that disparities in access to technologies will persist, which may in turn exacerbate health inequities.

Community resources and infrastructure are either not optimally leveraged or are lacking

Panellists also indicated that some long-term care homes are not well rooted in their community. Thus, community supports are often not leveraged to fill gaps in these long-term care homes. Panellists referred to school-based intergenerational programs, or programs and services offered by public libraries. Many community-based activities shifted to virtual activities during the pandemic and could have benefited residents of long-term care homes (if they had the proper technological support).

In addition, panellists pointed out that the lack of affordable high-speed internet access in some areas across the country is a key upstream barrier that will need to be addressed. Others also pointed out that when internet access was available in a long-term care home, it was often for administrative purposes only. Thus, no Wi-Fi was available for all residents (either in communal rooms or in residents' rooms).

"Stir up the imagination, in a positive way. Stir up minds in order to get a better system, better nursing homes."

Discussing the elements:

How can we address the problem?

After discussing the challenges that together constitute the problem, panellists were invited to reflect on three elements (among many) for identifying and harnessing the potential of technology in long-term care settings in Canada:

1) ensure that long-term care homes have the supports they need to use technologies;
2) engage long-term care home operators, staff, residents, their caregivers and the industry in developing and adopting technologies; and
3) make small yet rapid changes that are centred on residents, caregivers and families to support the development, evaluation and implementation of new technologies.

The three elements can be pursued together or in sequence. A description of these elements, along with a summary of the research evidence about them, was provided to panellists in the citizen brief that was circulated before the event.

During the deliberations, several values and preferences were identified from citizens in relation to these elements. Overall, three key themes emerged. First, there is a need for national standards and guidelines for enhancing long-term care that need to be met provincially (and a reflection about how technologies could help to meet these standards and guidelines).

Second, the scope and sequencing of the elements was viewed as needing to be revised. For example, co-design approaches should also be used to plan the renovation of existing long-term care homes and the building of new ones, and the context of long-term care homes should consider not only the physical/technological environment, but also the broader social, cultural and policy environments that can support the adoption of appropriate technologies.

Lastly, innovation was a recurrent value-related theme during the panels, but some panellists emphasized the need for incremental innovations, while others advocated for more radical innovation. For example, some emphasized the need for incremental innovations given that some of the challenges facing long-term care (particularly challenges revealed during the COVID-19 pandemic) could be addressed with technological solutions that are cheap and simple. Many panellists emphasized that minimal investments could go a long way. Others emphasized radical innovations given the view that there is an opportunity to completely re-imagine the long-term care sector, and to leverage technologies to achieve this. As one panellist said: "Stir up the imagination, in a positive way. Stir up minds in order to get a better system, better nursing homes."

Element 1 – Ensure that long-term care homes have the supports they need to use technologies

The discussion about the first element focused on ensuring that long-term care homes operate in a context that can support the adoption of technologies.

During the discussion about element 1, four value-related themes emerged: holistic, collaboration, excellent care experience, and based on citizens' views and preferences (see Box 3).

The first value-related theme (holistic) illustrated that the 'context' of long-term care homes should consider not only the physical/technological environment (for example, access to high-speed internet or

> **Box 3: Key messages about element 1**
>
> **What are the views of panellists regarding this element?**
>
> - Holistic
> - Collaboration between long-term care homes and community-based organizations
> - Excellent care experience (resident, family, and community-centred)
> - Based on citizens' values and preferences

renovated buildings), but also the broader social, cultural and policy contexts that can support the adoption of appropriate technologies.

The second value-related theme (collaboration) reflected their desire for long-term care homes to be an integral part of the community. Several panellists indicated that improving long-term care should be seen as a pressing issue for the entire community. Thus, long-term care homes should collaborate with community-based organizations (for example, schools, public libraries and other non-governmental organizations) to get support for the adoption of technologies. For example, panellists indicated that community supports could include social programming that could be delivered online to support social engagement of residents (for example, leveraging online programming of public libraries), engaging volunteers (for example, high-school students) to help teach residents and families to use technology, and adopting a device-sharing program such as what was done for school-aged children where devices were made available to enable online education during the pandemic.

The last two value-related themes relate to the need to improve the care experience of residents, and that this can only be achieved if solutions are grounded in views and preferences of citizens. Panellists commonly agreed that co-design approaches (like those described in element 2) should be used to plan the renovation of existing long-term care homes and the building of new ones, as well as determining priorities. Such co-design practices were seen as being central to ensuring that everything done by long-term care homes is centred on the needs and preferences of residents, families and the broader community.

Panellists also emphasized the need for ongoing and meaningful engagement in determining what is needed for upgrading existing buildings, requirements for new buildings and community supports. They suggested that each long-term care home should have a community advisory board comprised of residents, caregivers and families, and community members to inform and support decisions.

Element 2 – Engage long-term care home operators, staff, residents, their caregivers and the industry in developing and adopting technologies

The discussion about the second element focused on requiring co-design processes to develop technologies in the long-term care sector. Panellists strongly supported the need for co-design approaches, not just for designing and adopting innovative technologies (element 2), but also for the types of activities included in elements 1 and 3.

During the discussion about element 2, four value-related themes emerged: excellent care experience, collaboration, adaptability, and value for money (see Box 4).

Box 4: Key messages about element 2

What are the views of panellists regarding this element?

- Excellent care experience (resident, family, and community-centred)
- Collaboration between long-term care homes and key stakeholders
- Adaptability
- Value for money (resource stewardship)

Panellists first indicated that co-design approaches are fundamental to improve the experiences of residents, caregivers, and family members (excellent care experience).

Co-design approaches were also viewed as supporting greater collaboration among all those involved in the long-term care sector (including long-term care staff and operators, residents, caregivers, families, community-based organizations, the industry and others). These were viewed as critical to achieve a common vision about problems, collectively finding solutions (whether technology-based or not), and thus supporting greater buy-in for implementing these solutions.

The third value-related theme referred to adaptability. Panellists indicated that co-design was important to account for differences in needs. Several panellists stated that "one design will not fit all." For example, the needs of a dementia patient will be different than those of a resident with functional impairments, and this needs to be accounted for in the design process. Technologies that cannot be tailored and adapted to specific residents (or to the needs of specific long-term care facilities), and to accommodate disabilities, will not be able to be used as much as those that are designed with this in mind.

The last value-related theme was value for money. While co-design approaches may be more expensive, the large upfront investments were viewed as likely to pay off given that the alternative is producing sub-optimally designed products that are not taken up.

Element 3 – Make small yet rapid changes that are centred on residents, caregivers and families to support the development, evaluation and implementation of new technologies

The discussion about the third element focused on how to support health-system leaders to try new approaches and to make small yet rapid changes to the way in which new technologies are developed, evaluated and implemented in long-term care homes.

During the discussion about element 3, five value-related themes emerged: standardization, accountability, fairness, innovation and leadership (see Box 5).

> **Box 5: Key messages about element 3**
>
> **What are the views of panellists regarding this element?**
>
> - Standardization
> - Accountability
> - Fairness
> - Innovation
> - Leadership

The first two value-related themes (standardization and accountability) were commonly discussed across all panels. Panellists expressed a strong preference for national standards and guidelines for enhancing long-term care that need to be met provincially/territorially. Such standards were viewed as also being needed for associated areas that would have an impact on the use of technology, such as enhancing access to the internet given that it would have many positive societal-level spillover effects. As one panellist said: "We wouldn't have a school operating without Wi-Fi. Why would a long-term care home be any different? It's about quality of care and quality of life." These standards could be used for baseline approval for public funding.

This discussion led to the third value-related theme (fairness). Panellists indicated that without minimum standards, they were concerned that it would foster the creation of a multi-tiered system and ultimately exacerbate equity issues across the country. As one

panellist said: "We have a competitive landscape in the long-term care sector, which may support innovation. But it may come at a price." In addition, they emphasized that social-equity considerations should be built into any sort of rapid-learning system.

Panellists also emphasized the importance of innovation, but some had different views about the best way to support this. On one hand, some shared that they think that long-term care homes could have the necessary conditions to innovate on their own: "People in long-term care need a licence to experiment, to learn and to improve." To achieve this, flexible programs, services and policies should be put in place to incentivize, rather than inhibit, the adoption, evaluation and modification of technological innovations.

On the other hand, several panellists across the panels also emphasized the important role of a coordinating body and information-sharing platform for sharing innovative solutions. This could enable others to adapt and implement innovations according to local contexts across the country, and it was viewed as being needed across long-term care ownership models (public, private for-profit and private not-for-profit). The coordinating body and information-sharing platform were also suggested for sharing innovative solutions across government sectors (for example, community and social services, education, health, justice). Many sectors may have developed or adopted innovative solutions to address problems during the COVID-19 pandemic, and these solutions may be relevant to the long-term care sector.

The last value-related theme related to leadership. Some form of centralized leadership was seen as essential within each long-term care home and at the regional/provincial level (for example, a Chief Technology Officer, or an independent body) to support scaling up and spreading technological innovations, and to monitor improvements.

"We need a high-level framework or goals to work towards."

Discussing implementation considerations:

What are the potential barriers and facilitators to implementing these elements?

After discussing the three elements of a potentially comprehensive approach, panellists examined potential barriers and facilitators for moving forward.

The discussion generally focused on three key barriers:

- stakeholders in the long-term care sector are overburdened by the COVID-19 pandemic;
- there is a need for systemic (and complex) changes to support the renewal of the long-term care sector; and
- care in long-term care homes is increasingly provided by an unregulated workforce, which is very conscientious and dedicated, but may not have the qualifications and skills to leverage the full potential of technologies.

When turning to potential facilitators to moving forward, panellists identified two windows of opportunity:

- the COVID-19 pandemic has created a sense of urgency to drive change in the long-term care sector; and

- the general public and key stakeholders have called for a new vision, national standards and an innovation agenda for the long-term care sector.

Several panellists expressed a sense of urgency. As one panellist said: "We have to do something, it's insane. We let people languish in there." Another panellist indicated that this sense of urgency may not last forever, and we needed to act now: "We need 10-12 months to act and leverage the burning platform of COVID-19. After that, it will be out of people's mindset." To keep this burning platform going, one panellist suggested using storytelling strategies to raise public awareness about the life of residents, and how technologies could be harnessed to improve their care and quality of life.

Panellists also indicated that the moment may be ripe to develop a new vision, national standards and an innovation agenda for the long-term care sector: As one panellist said: "We need a high-level framework or goals to work towards." This vision should be aligned with the expectations and future needs of the next generation of residents of long-term care homes. As a second panellist said: "A lot of people are getting older and will expect more tech in their long-term care homes. [Technologies] are becoming the norm, rather than the exception." A third panellist went further: "[System leaders] need to be ahead of the game. (...) Where do we want to be in 10-15 years with long-term care? We need a long-term vision and how technology can improve care and the quality of life. And then, we need to line up all the levels of governments to achieve this vision."

Acknowledgments

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Conflict of interest

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