

Can virtual reality make long-term care residents happier?

One CABHI project investigates

By Rebecca Ihilchik

In one Fredericton long-term care home, older adults are donning headsets and entering alternate worlds.

Virtual reality (VR) is one of the most exciting technologies in seniors' care innovation today. Based at York Care Centre, researcher Sherry Law is introducing VR to long-term care residents and testing whether VR sessions can improve their well-being. She's also investigating how the technology might be used as a mental health treatment. The project is funded by the Centre for Aging + Brain Health Innovation (CABHI), powered by Baycrest, and the New Brunswick Health Research Foundation (NBHRF).

Sherry joined us for a Q&A about her work.

WHAT INTERESTED YOU IN EXPLORING VIRTUAL REALITY IN LONG-TERM CARE?

The idea for my project came in 2013 when my own grandmother was nearing her end of life. She lived in Hong Kong, in an environment similar to that of long-term care. I wanted desperately to assist her, but being separated by distance I could only turn to technology to help in any significant way. That was also around when I first began hearing about VR prototypes being developed and made available, so naturally I considered it

as a way to improve my grandmother's situation.

HOW MIGHT VR AFFECT RESIDENTS' LIVES?

VR can be an accessible and affordable means for leisure activities in long-term care. It can put users in calming or enjoyable settings, like a room full of puppies, or help them experience things they may not otherwise be able to do, like riding a roller coaster. VR can also take users to a different part of the world – for example, they can 'sightsee' at Big Ben in London, England. This way they can safely take a mini-vacation when they feel like it. All of this could have a positive effect on their mental health.



Researcher Sherry Law.
Rebecca Ihilchik, Marketing & Communications Specialist Centre for Aging + Brain Health Innovation

WHAT'S THE FEEDBACK BEEN FROM PARTICIPATING RESIDENTS?

Residents have expressed joy and amazement at some of the virtual worlds that we have travelled to. Often when the participant chooses to travel in VR, they begin recounting their past travels or telling stories about where they grew up.

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Electronic tool has potential to improve asthma care

By Ana Gajic

A new electronic decision support tool for managing asthma has the potential to improve the quality of asthma care in primary care settings, suggests a study led by St. Michael's Hospital in Toronto, Canada.

The research, published in the *European Respiratory Journal*, aimed to determine whether the Electronic Asthma Management System (eAMS) could help close existing gaps in asthma care. The system is a first-of-its-kind evidence-based computerized decision support tool.

"We have excellent therapies for this disease, yet most patients do not receive the best care, and as a result, are poorly controlled," says Dr. Samir Gupta, an associate scientist at the Li Ka Shing Knowledge Institute of St. Michael's Hospital, who led this study. "There are many barriers facing busy primary care physicians in providing the best care, including lack of time, knowledge, training, and local resources. We sought to try to overcome these barriers by leveraging the power of technology."

Dr. Gupta and his team followed 23 physicians for two years across three large family health teams, assessing care provided to 1,272 unique patients with asthma. The study analyzed baseline care for one year, then integrated the eAMS into the practices and monitored care for another year to identify changes in the quality of care. The evaluation of an electronic tool builds on recent research led by Dr. Gupta that found that significant gaps persist in asthma care in these areas across the province.

With the eAMS, asthma control assessment increased from 14 per cent to 59 per cent of patients. The tool also increased the proportion of patients who received an asthma action plan from zero to 18 per cent. This is a self-management tool that lets patients know how to adjust their medications in case their asthma flares up. Asthma control assessment and action plans have been key recommendations in asthma care guidelines for more than 20 years.

"Our research demonstrates that a carefully designed eHealth tool can

effectively be used in busy primary care settings, and can improve asthma care," says Courtney Price, who was a summer student at the Li Ka Shing Knowledge Institute while the analysis was completed. "This is especially important as asthma affects 339 million people globally, is one of the most common chronic diseases in Canada, and is continuing to increase in both prevalence and cost."

The decision support tool consists of:

1. An electronic questionnaire which patients typically complete on a tablet device in the physician waiting room (providing information about their asthma);
2. An automated, computerized decision support system which then processes these data to instantly produce a set of asthma care recommendations and presents these to the clinician upon opening the patient's electronic chart; and
3. A printable asthma action plan that is auto-populated by the eAMS and given to patients by the clinician (an evidence-based tool which provides



Dr. Samir Gupta, an associate scientist at the Li Ka Shing Knowledge Institute of St. Michael's Hospital.

guidance on what patients should do if their asthma flares up).

Dr. Gupta and his team hope to provide access to the eAMS to all family physicians in Canada. Next steps will include integrating the system across the different electronic medical record systems in use across Canada, further studies to show its impact on patient health, and adding additional features to the tool.

"In the future, we also hope to use the valuable lessons learned in this study to design similar tools for other chronic diseases," he says. ■

Ana Gajic works in communications at Unity Health; Providence Healthcare, St. Joseph's Health Centre and St. Michael's Hospital.

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Virtual reality

Some are younger residents who feel left out of being able to participate in technological advancements like computers or smartphones, so being part of the CABHI project helps them feel like they're catching up.

One of the participating residents used to be a teacher and lamented the fact that VR hadn't been available as an educational tool when she was teaching. She believed the technology could do great things for residents. Another always reserves time in our sessions to ride some roller coasters,

which she'd never been able to do because of physical limitations. Sometimes she swears by accident because of the thrill! It's a joy.

WHAT LONG-TERM IMPACT WILL THE CABHI PROJECT RESULTS HAVE?

If the data indicates that VR can improve residents' moods, the technology could be implemented in York Care Centre and other long-term care centres in Canada as a supplementary tool to alleviate mood

or mental health concerns in the population.

The benefits of improving mood in long-term care residents are multi-faceted. An improved mood could boost participation in rehabilitation or medical intervention, improve cooperation between the resident and staff, decrease aggressive incidents, and potentially increase overall health by reducing stress. These advantages could be translated into financial benefits as well.

HOW'S YOUR EXPERIENCE BEEN WORKING WITH CABHI?

Everyone on CABHI staff has

been gracious with their time, helpful with answering questions, and reassuring when I felt discouraged. They've offered many supportive services to help me not only complete my project, but also expand it and scale it up.

I would also say that CABHI's holistic approach to supporting their innovators' development as businesspeople and leaders is an amazing value add to the Canadian market. They empower entrepreneurs and provide them with the tools needed to succeed. It's a very special thing.

To learn more about CABHI, visit www.cabhi.com. ■

Rebecca Ihlichik is the Marketing & Communications Specialist at the Centre for Aging + Brain Health Innovation (CABHI).