

**For immediate release**

## **IBM software aids research aimed at extending seniors' independent living**

**Edmonton AB & Toronto, ON** .... November 8, 2011 – [HealthAchieve 2011] IBM [NYSE:IBM] today announced its software is being used to correlate data from sensors capturing patient activity and replicate that in a virtual world with avatars that represent the elderly subjects in a unique pilot aimed at providing health researchers and students with insights on how to care for Canada's aging population.

Since June, 2011, University of Alberta researchers in collaboration with Edmonton's Glenrose Rehabilitation Hospital have been using IBM software to study elderly clients who volunteer to stay in a model, self-contained "independent living suite" at the facility. The suite is instrumented with sensors and equipped with smart devices collecting information about their daily activities.

The data will be used to understand how to make better use of healthcare resources, enable remote collaboration among providers, and contribute to early intervention and long-term management of chronic diseases. Researchers will also learn how to prepare older people for independent living, and extend the length of time seniors are able to live in their homes.

The number of Canadian seniors will increase from 4.2 million from 2005 to 9.8 million by 2036, and seniors' share of the population is expected to almost double, increasing from 13.2 per cent to 24.5 per cent, according to most recent information available from Statistics Canada. The number of Americans over the age of 65 is expected to rise to 88.5 million in 2050 making up 20 percent of the population, according to the US Census Bureau. The healthcare needs of this growing demographic are significant and expensive.

IBM WebSphere® Sensor Events software collects and processes a stream of data from sensors capturing a range of medical and physical inputs, from heart-rate and body weight to electricity consumption and the use of doors, furniture, light switches and appliances. The data stream is analyzed to assess the occupant's ability to take medication as prescribed and other aspects of independent living. The analysis results are also used to animate an avatar of the occupant that mirrors their activities in a virtual version of the apartment.

"We are using an avatar and the visualization to represent the people in the suite as this is far less intrusive than having a video or live monitoring system on them all the time," says Dr Lili Liu, a professor of occupational therapy at the University of Alberta, and research affiliate at Glenrose Rehabilitation Hospital.

This virtual-world view can be monitored in real time, and replayed recordings can be used for simulation training for health-sciences students. Ultimately, researchers hope to understand how the integration of sensor networks with virtual worlds can impact the future of at-home health monitoring and care delivery.

While the pilot is still ongoing, researchers have identified a need to track two new activities – use of wheel chairs or walkers, and food intake. Additionally, by monitoring subjects' use of a medication reminder device, they have determined how to improve its usability.

“We know data is being generated all the time, but harnessing, aggregating, analyzing and gaining insights from it have been challenges. When you view data as diverse as heart rate monitor and electrical consumption independently, out of context, it means very little. The IBM software has enabled us to put it together in a visualization and actually see a patient's ability to function independently, so clinicians can intervene when necessary and students can learn how best to care for them. It has provided visibility to the physical world in a way we've never been able to see it before,” says Eleni Stroulia, NSERC/AITF Industrial Research Chair on Service Systems Management at University of Alberta.

The pilot comprises the first 'real-world' trial, where the concept moved out of a university simulation environment to the Glenrose Rehabilitation Hospital, and is part of the “Smart Condo <sup>™</sup>” initiative, a multi-year, research collaboration with the IBM Alberta Centre for Advanced Studies, professors and students from six faculties at the University of Alberta, as well as NSERC, OLSONET, AITF and the Government of Alberta.

“Innovation isn't just about new technologies and inventions, it is about taking what we have and getting the very most out of it,” said the Honourable Greg Weadick, Minister of Advanced Education and Technology. “The Smart Condo is an outstanding example of how we can use innovative technology to help Albertans be safer, healthier and more connected, best of all, right in their own homes.”

A permanent “Smart Condo” installation is currently being completed at the Health Sciences Education and Research Commons, part of the University of Alberta's new Edmonton Clinic Health Academy.

The research was released today at HealthAchieve 2011, in Toronto, ON.

For more about IBM please visit [www.ibm.com/ca/en](http://www.ibm.com/ca/en)

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