

Centre for Global eHealth Innovation

University Health Network



OR scenario



Usability lab

The Centre is a joint effort of UHN and the University of Toronto and was built with funds from the Canadian government, through the Canada Foundation for Innovation, and the Ontario Innovation Trust.

It is a place where human, physical and virtual resources come together to develop and evaluate eHealth innovations, using the expertise of leaders in the social sciences, technology and health fields. Using the Centre's state-of-the-art facilities and resources, we are able to engage in collaborative, transdisciplinary efforts, crossing institutional, political, cultural and geographic boundaries.

INNOVATION LABS

The Centre is a place where human, physical and virtual resources converge to support collaborative evaluation of innovations, research and development, knowledge exchange, training of highly qualified personnel and business development. It houses a state-of-the-art Usability Laboratory designed to test eHealth innovations, the first Multi-Tasking Simulation Laboratory in the world exclusively dedicated to the study of eHealth innovations, and a telecommunications and collaboration infrastructure.

Usability Laboratory

This unique environment represents the first of its kind in Canada and is devoted to furthering the evaluation and design of health technologies from a human factors perspective. The health usability lab includes testing and observation rooms to allow researchers to observe and record study participants as they interact with technologies or devices under evaluation, allowing researchers the opportunity to pre-test and refine the systems. Remotely-controlled video cameras and microphones are used to capture participant interactions with the systems under study while recording and multiplexing systems allow access and play-back of time-stamped and annotated video sequences from various sources (computer screens, screen capture software, cameras, microphones). This provides rich information on their perceptions about the content, functionality, error proneness, and user-friendliness of the system during use.

Props and theatre staging are able to simulate virtually any health care and home environment including clinic waiting rooms, operating rooms, intensive care units, consultation rooms, nursing stations, or the home environment.

Multi-media technologies offered include pan-tilt-zoom video cameras and microphones; video recording and multiplexing systems; screen capture software, webcams, and eye-tracking devices.

Data capture and output may be saved to any digital or analog format or saved onto the Centre's standalone network for later editing. Information may be edited using a full multimedia suite for high quality productions. Standard operating systems and platforms are Windows, Macintosh, Linux. Data analysis, visualization tools, video-streaming and database servers are also available for use.

Multi-Tasking Simulation Laboratory

Two important barriers often hinder the development of research on eHealth innovation. First, innovators have limited access to the environments where health-related decisions and information exchange happen. Second, innovations cannot usually be tested in the real world without serious disruption of health services activities.

The Multi-tasking Environment is the first simulation laboratory in the world exclusively dedicated to eHealth research. It allows assessments of new technologies under controlled conditions, in an area that simulates many real-world settings where it could be accessed e.g., hospital and clinic waiting rooms, operating rooms, intensive care units, consultation rooms, nursing stations, or the home environment. Following testing and refinement in these environments, researchers can introduce the newly developed application into the real world with maximum likelihood of uptake and minimum disruption. The

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most important components of the simulation environments are the Testing Rooms and Research Observation Rooms. The testing rooms are reconfigurable theatre style laboratory space (approximately 3000 square feet) that can be transformed into various health-related environments. The equipment within the Observation Rooms in the Multi-tasking Environment is similar to that described for those in the Usability Lab.

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Telecommunications and Collaboration Infrastructure

This robust infrastructure can support Webcasting to up to 400 locations, simultaneous videoconferencing to 80 different sites and engagement of a virtually unlimited number of people through the Web, mobile telephones and interactive television. This enables a wide range of collaborative activities that range from highly-secure telehealth consultations to open interactions with the general public.

Through its partnership with the North Network, UHN Telehealth is able to reach out to more than eighty geographically disparate areas in Northern Ontario. Through close collaboration with other networks, UHN Telehealth provides healthcare through much of the rest of Ontario and to many other provinces. In addition, the extraordinary richness of health care expertise is shared provincially, nationally and internationally through educational videoconferences supported by UHN Telehealth.

JOURNAL OF MEDICAL INTERNET RESEARCH

The Journal of Medical Internet Research, edited by Dr. Gunther Eysenbach (Senior Scientist at the Centre for Global eHealth Innovation and Associate Professor, Faculty of Medicine, U of T) and hosted by the Centre for Global eHealth Innovation (www.ehealthinnovation.org), is the leading open access peer-reviewed transdisciplinary journal on health and health care in the Internet age, in the world.

Dr. Alejandro (Alex) Jadad (Founder of the Centre for Global eHealth Innovation; Canada Research Chair in eHealth Innovation; Rose Family Chair in Supportive Care; and Professor in the Faculty of Medicine, U of T) participated as one of the lead panelists (with Mikhail Gorbachev, Al Gore and Felipe Gonzalez) in the first meeting on Democracy and the Knowledge Society held on October 9 and 10 in Malaga, Spain. The proceedings of the meeting, which was a success, were shared with the world and recorded using ePresence, a technology created at U of T. They can be viewed at http://hosting.epresence.tv/malaga/website_archived.aspx?c=1 Dr. Eysenbach was the host of MEDNET, the 11th World Congress on Internet in Medicine, which brought together leaders in eHealth from all over the world from October 13 to 20.

Dr. Jadad and his team continued supporting the Spanish eHealth Network, which now includes representatives from all Latin American countries and Spain (www.revistaesalud.com). Their work now receives the highest ranking when the term eSalud (eHealth in Spanish) is used to explore online information with the most prominent search engines in the world.

The Centre for Global eHealth Innovation also supported a successful proposal to the International Development and Research Centre of Canada, for the creation of a harmonized catalogue of open source tools to enable eHealth activities in the Spanish-speaking world. This proposal was one of five chosen from among more than 500 presented by leading groups from over 30 countries, and the only one that relates to health.