

Health Sciences Education and Research Commons (HSERC)

Smart Condo

Student Experience

Imagine the task: collectively create a home - from scratch - for a family with several health concerns and a young child.

Make the **800 sqft** home modular so the family can **age in place** as their lives and their conditions - multiple sclerosis, asthma and type 1 diabetes - become progressively more complicated.

Challenge yourself to **consider the clients'** senses, perceptions, emotions and thoughts. Take into account energy use, blood sugar levels, balance and coordination, vision impairment, reduced sensitivity, and fatigue.

And, do this all in **less than eight weeks** with **46 other students** from four separate university programs.



Intelligent Tools

The Smart Condo was designed and mocked-up by University of Alberta students in October 2008. The Condo will be a functional training laboratory for health sciences students. It includes four types of energy efficient areas that support self management of disease including monitoring and early intervention of disease progression.

It will enable the ongoing development and testing of intelligent tools and applications to deliver non-intrusive care and to optimize health care resources.

The Smart Condo incorporates wireless sensor technologies for patient monitoring through visualization in a 3D Virtual World and provides a mechanism to test new remote rehabilitation tools and methods.

Better personal health management will be achieved at home by using existing IT infrastructure, intelligent tools and consumer electronics.

The ultimate goal is to help people achieve more independence and to age in place, enjoying a greater quality of life.

Personalized Health Care

As part of an overall strategy to create distributed personalized healthcare, the Smart Condo initiative will enable ongoing development and testing of intelligent tools used to assist in healthcare delivery, such as:

- Management of health events, appointments and reporting
- Consultation with healthcare providers through video conferencing
- Web-based physiological monitoring of patients using sensors
- Data mining for health surveillance
- Diagnosis and home screening for risk prevention
- E-health network infrastructure testing
- Remote management of chronic conditions or recovery from surgery or acute events

Commercial Development

The Smart Condo will benefit many industries through:

- Testing medical device prototypes in a clinical environment prior to wide scale deployment
- Testing e-health software and health management applications including appointment scheduling, reporting and chronic condition monitoring
- Prototyping processes for smart buildings
- Prototyping designs for community developers and homebuilders to accommodate a variety of medical devices and sensor networks

Partnership Opportunity

The Smart Condo is in the TELUS Centre on the U of A campus. U of A partners are the departments of Occupational Therapy, Industrial Design, Computing Science, Mechanical Engineering and Human Ecology and the Faculty of Pharmacy and Pharmaceutical Sciences. The Smart Condo is also developing a community partnership with Edmonton's Glenrose Hospital.

We are seeking corporations and foundations interested in an investment partnership to help us achieve our vision for the Smart Condo. Opportunities to partner include funding the development of the Condo, providing technical expertise and the provision of new or used medical equipment.

The Edmonton Clinic North

The Smart Condo will transition from a pilot project to a fully functioning and expanded learning space in the Edmonton Clinic North when it opens in 2011 under the leadership of the University of Alberta Health Sciences Council.



Approx. 15,000 sq ft on the 2nd floor will be devoted to an interdisciplinary clinical education and research center which will include the Smart Condo.

This centre - the Health Sciences Education and Research Commons (HSERC) - will use extensive simulation techniques to immerse health care students in a variety of care scenarios, teaching them how to communicate, collaborate and deliver care with patient health and safety at the core.

Innovative Research

The Smart Condo provides a multitude of opportunities for innovative research on topics including, but not limited to, the following:

- Training interdisciplinary teams of health-science students for improved collaborative health delivery
- Improving patient confidence and acceptance of telehealth services
- Enabling remote collaboration among health care providers in disparate locations
- Developing innovative sensor-based systems for data collection and analysis
- Evidence-based diagnosis and early intervention of chronic diseases
- Improving the cost-effectiveness of health-care resources at homes and hospitals

