

*This newsletter is the first in a series intended to highlight innovative technology relevant to the Courage Centre. Our first topic is "Smart Housing"*

A smart house is a living facility that incorporates built-in sensors and technologies that support independence, health and wellness. Smart homes are often thought of in the context of an aging population but special assistive technologies can also compensate for loss of function due to a disability.

Smart house objectives are met through technologies that interact with the user and the environment, make decisions, and communicate information to caregivers.

The goals of smart house technologies are diverse. Three broad categories are:

#### **Enhance Safety and Reduce Risk**

- Fall detectors that are wearable or based on intelligent motion detecting systems.
- Enhanced household safety with stove timers, water temperature controls and with intelligent lighting controls.
- Wander management for persons with dementia using GPS or radio frequency based devices that alert a caregiver when physical boundaries are crossed.
- Medication compliance systems that range from simple reminders to caregiver alerts if medication containers have not been opened.
- Mobility monitoring using infrared sensors provide caregivers with a snapshot of daily activity.
- Remote monitoring of physiological signs and exchange of data with health care professionals can help identify changes in well being.

#### **Improve Function**

- Rehabilitation therapy that is interactive through the TV or internet and overseen by a therapist.
- Integrated assistive technologies to improve accessibility and reduce physical barriers.

#### **Increase Lifelong Engagement**

- Interactive communication systems that provide social connectedness and easy access to health information and support groups.
- Reminder and cueing systems to address cognitive decline with aging.
- Exercise equipment with motivating games or scenes.
- Computer 'games' that promote brain stimulation and have diagnostic tools related to cognitive function.

Barriers to implementing technology include awareness, acceptance, usability, and reliability. Another significant barrier will be related to 'funding challenges', and the need for the development of 'supportive policies' to get this innovative technology into the hands of individual users and their families. A key to resolving these challenges is to prove that these innovative concepts are not only technically possible, but also well supported and well accepted by a large group of affected stakeholders.

#### **For Examples and More Information:**

Overview of technologies and applications:

[www.aahsa.org/article.aspx?id=6426](http://www.aahsa.org/article.aspx?id=6426)

[www.tiresias.org/research/guidelines/smart\\_home.htm](http://www.tiresias.org/research/guidelines/smart_home.htm)

Examples of available products and packages:

[www.tunstall.co.uk/main.aspx?PageID=4](http://www.tunstall.co.uk/main.aspx?PageID=4)

Spotlight on new technologies and services:

[www.ageinplacetech.com](http://www.ageinplacetech.com)

#### **Comments by the Editorial Advisor:**

**Gary McPherson C.M., A.O.E., LLD**

Special Advisor to Glenrose Rehabilitation Hospital

The evolution of technology over the last 30 years has had almost as much influence on societal inclusion, as public awareness and progressive government social policy. Technology has changed almost every aspect of life for someone who has a disability. The advancement of lightweight and sophisticated mobility devices was only the beginning. The fact is that technological innovation that was designed with remedial expectations in mind has often positively affected the mainstream public. (E.g. elevator alert signals & voice technology.

Over the last 10 to 15 years, technology has infiltrated and significantly influenced my life in a big way. It has made me more independent and more productive -- both at home and at work; and, this is before I have had the opportunity to experience the wonderful work that will be undertaken by the Courage Centre and the Glenrose Rehabilitation Hospital. Thanks to this work, I think that we can all look for even more exciting times ahead.