Researchers use sensor technologies to remotely monitor aging adults' health

June 14 2012

Many adults wish to maintain their independence as they age, but health problems often require them to live in assisted-care facilities where they can be observed by medical professionals. Now, technologies developed by University of Missouri researchers could help aging adults stay in their own homes longer while still being monitored by health care providers.

Marjorie Skubic, a professor of electrical and computer engineering in the MU College of Engineering, and Marilyn Rantz, a Curator's Professor of Nursing in the MU Sinclair School of Nursing, have used motion-sensing technology to monitor changes in residents' health for several years at TigerPlace, an eldercare facility in Columbia. Now, they have received a grant from the National Science Foundation to expand their work to a facility in Cedar Falls, Iowa.

Fiber networking in Columbia and Cedar Falls will provide the infrastructure necessary for [health care providers](#) in Missouri to remotely monitor the health of elderly residents in Iowa. High-speed video conferencing capabilities will allow communication between staff and residents at the two locations.

"Using what we're already doing at TigerPlace and deploying it at the facility in Cedar Falls will allow us to further test the concept of remote [health care](#)," Rantz said. "Monitoring individuals with in-home sensors allows us to unobtrusively monitor their health changes based on their individual [activity patterns](#) and baseline health conditions."

Rantz says the in-home monitoring systems use proactive, rather than reactive, ways of monitoring seniors' health. The systems provide automated data that alert health providers when patients need assistance or medical interventions. The sensors will include video gaming technology for measuring residents' movements in the home, and the researchers will integrate new hydraulic bed sensors that will monitor an individual's pulse, respiration and restlessness.

"We're using high-speed networks to solve real-world problems," Skubic said. "Implementing the health alert system in Cedar Falls will tell us how the approach we use at TigerPlace compares to other settings. It will be an important step toward facilitating independent housing, which is where most seniors want to be."

Skubic and Rantz said in-home sensors, such as the ones in their study, can help identify early changes in health. Identifying issues early is the key to maintaining health, independence and function for older adults, the researchers said.

"The sensors help identify the small problems—before they become big problems," Rantz said. "Based on the data collected by the sensors, health providers can offer timely interventions designed to change the trajectory in individuals' functional decline."

Provided by University of Missouri-Columbia

Citation: Researchers use sensor technologies to remotely monitor aging adults' health (2012, June 14) retrieved 16 April 2024 from https://medicalxpress.com/news/2012-06-sensor-technologies-remotely-aging-adults.html