Emerging Technologies to Support Aging-in-Place

Presented by

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How Technology Fits

Responding to changing needs

- Physical modifications to the home
- Services
  - Caregivers
- Technology
  - Smarthome technologies
  - Services Technologies
Broad Areas of Aging Services Technologies

- Safety (environment)
- Physical and mental health and wellbeing (self management)
- Social connectedness (other people)

Source: CAST, agingtech.org
Safety

Personal Emergency Response System
- Pendant, watch, base station
- Two-way remote voice
- Accelerometer
- GPS + fall detection
- Monitoring personnel

Advanced In-home Monitoring
- Motion Sensing
- Monitor routine automatically
Safety

Activity monitoring thru computer vision
- Built into environment, not on person
- Better understanding of activity context
- Automating more services, responding intelligently
- Share with caregiver, if necessary
- Privacy and acceptance

(Romero, & Abowd)
Safety

Other areas:

- Fall prevention
  - Get up and Go assessment
  - Automated monitoring of physical environment
  - Monitoring of behavioral trends
- Kitchen hazards – automated monitoring
  - Stovetops
  - Microwaves

Get up and Go Monitoring (Berrada, Romero, & Abowd)
Health and Wellness

Personal Health Record (PHR)
- All health information in one location
- Quick sharing with electronic health record (EHR) for medical practitioners
- Reduce errors

Barriers:
- Healthcare today
- Compatibility
- Adoption of computer technologies is slow
Health and Wellness

Telehealth systems in the home
- Virtual Doc Visits
  - Remote diagnosis
- Vital signs monitoring
- Wellness monitoring
- Coaching or question-based assessment

AND Medical Devices: Blood pressure monitor, scale and thermometer, Nonin Medical Bluetooth Pulse Oximeter and Apex Fitness BodyBugg
Health and Wellness

Medication management/adherence
- Reminder systems
- Automated dispensing systems
- Choke collar sensor and tagged pills?
Health and Wellness

Cognitive assessment and strengthening
- Alzheimer’s detection
  - DETECT
- Cognitive Fitness
  - mPower
  - BrainAge (Nintendo)

Dakim, Inc. invented the mPower Cognitive Fitness System

Zenda Technologies, DETECT
Health and Wellness

Cognitive aids around the home

- FETCH – finding lost objects
- Powerline Positioning
  - Location awareness
- Memory Mirror
- Cooks Collage
Connective Technologies

Virtual visitation with family and friends

- Community Center
- In-home
Connective Technologies

Computer 101
- SimpleC application

Addressing Social Isolation
- Linking community residents
- Beyond the organized community
  - CCRC, NORC, general aging-in-place

(Winegarden & Jones)
Connective Technologies

• Gaming
  ■ Social
  ■ Physical
• Online social networking
  ■ Myspace
  ■ Facebook

Wii Sports Bowling at the Sedgebrook retirement home in Lincolnshire, - Chicago Tribune

The Jive: social networking
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