Technologies for Helping Older Adults Age in Place

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DISCLOSURE

• Carol Kim and Lenard Kaye do not have an interest in selling a technology, program, product, and/or service to CME/CE professionals.

• Carol Kim and Lenard Kaye have nothing to disclose with regard to commercial relationships.

• The content of this presentation does not relate to any product of a commercial interest. Therefore, there are no relevant financial relationships to disclose.
Today’s Workshop Agenda

• The demographics driving the technology and aging revolution

• UMaine’s aging research initiative (Successful Aging Initiative for Living – SAIL)

• A special demonstration of devices and products

• A chance to learn from you: What is needed to age and thrive in our homes and communities?
A recent letter to the editor of a west coast newspaper

“I recently bought a new washer and dryer and was thrown a curve when my salesman said, “There’s an online rebate for this water-saving washer. Can you get someone to help you with that?” Apparently, the fact that I stopped coloring my hair and it’s now more white than gray plus a few other clues — I’m 77 — indicated to him I was unable to use a computer. I email, use Google, buy from Amazon and have done online rebates with Staples a number of times.”
The Context for Aging Research in Maine

• Oldest state in U.S.
• Most rural state
• More than 16% are 65+ (13% nationally)
• By 2020, 1 in 5 Mainers will be 65+
• Largest proportion of baby boomers in U.S.
The Demographics of Aging

• Growing 3 times faster than the young

• Fastest growing group are the 85 and over

• People 65 today will live another 18 years
Older Adults Are Increasingly Tech Savvy

• For the first time, in 2012, more than half of those age 65 and older used the Internet. In 2013, 59% went online compared to 54% in 2012. 47% said they have a high-speed broadband connection in their home.

• In 2013, 77% had a cellphone compared to 69% in 2012

• Older adults are the largest growing demographic on social networking sites

• Almost a half of older adult Internet users visit sites such as Facebook and LinkedIn, up from 13% in 2009 and 33% in 2012

• Between 55% and 70% of residents in a assisted living in the mid-west owned at least one computer and 57% used a computer several times per week

   Baby boomers are going to demand more technology-related services!

Source: 2014 Pew Research Center report on “Older Adults and Technology Use”
Role of Technology in Aging

- Eases the burden of chronic care for:
  - Patients
  - Families
  - Providers
  - The health care system

- Improves the quality of life for older adults in:
  - Safety
  - Health
  - Well-being
Factors in Technology Adoption by Older Adults

Influencing factors:
- Value
- Affordability
- Service trust
- Usability
- Reliability

Limiting factors:
- Failure to consider potential complications
- Lack of analysis in social context
- Experiential and cultural gap
- Connectivity issues

In Maine, significant challenges remain – poverty, stoicism, historical tradition, lack of infrastructure
Economic Opportunity for the State and Nation

Reduce costs  Extend workforce  New industries/jobs

Longevity economy = $13.5 trillion by 2032
Emerging Areas: *Aging Research*

- State with the oldest population per capita in the country
- Median age in Maine – 43.9 years of age
- Maine state residents aged 50 and older make up 38.7% of the total population (nationally – 31.5%) Through our engineering college, we are developing technologies to allow older Mainers to age and thrive in place
- Aging Initiative (UMaine SAIL) serve as an economic driver for the State of Maine
- Keep and draw young, highly trained/educated people to the state
- The Aging Initiative will also be System-wide initiative with the other 6 system campuses
AARP’s Nine Areas of Opportunity

Traditional 50+ Market

- Medication Management
- Aging with Vitality
- Vital Sign Monitoring
- Care Navigation
- Emergency Detection & Response

Boomers

- Physical Fitness
- Diet & Nutrition
- Social Engagement
- Behavioral & Emotional Health

Source: AARP Innovation @ 50+
Directions in Technology and Aging

Ready for rapid expansion and adoption

- Medication Optimization
- Remote Patient Monitoring (RPM)

Need further research and development

- Assistive Technologies
- Remote Training and Supervision (RTS)
- Disease Management

Newly emerging technologies

- Cognitive Fitness and Assessment
- Social Networking
Assistive Technologies: Sensors
Assistive Technologies: GPS
Assistive Technologies: Mobility Devices
Assistive Technologies: Communication

1. **Personal Reminders**
   - GlowCaps flash and play a ring-tone so you don’t forget. They even call your home phone.

2. **Social Network Support**
   - GlowCaps send a weekly email update to a friend or family member that you select.

3. **Pharmacy Coordination**
   - GlowCaps order refills from your pharmacy.

4. **Doctor Accountability**
   - Each month, GlowCaps send you and your doctor a printed report with incentives if you exceed compliance goals.
Remote Training and Supervision

Caregiver Training
New Arrivals on the Technology Front

Photos: mobiserv.info (left); Project RED (middle); NY Times (right)
Areas in Need of Technological Advances

- Support for those with cognitive impairments
- Cost-effective chronic disease management
- Mobility devices
- Health promotion aids
- Support for caregivers
Aging Initiative

• Maine has the oldest population in the country
• Has some of the most progressive policies on aging
• We will capitalize on our interdisciplinary strengths as the flagship campus of the UMaine System
• All units on campus will participate
  – Arts and humanities, engineering, health and biomedical sciences, education, etc.
Aging Initiative

- UMaine is partnering with businesses, other educational institutions, state and local agencies, healthcare systems, older adult groups
- Developing new strategies and technologies to promote successful aging
University of Maine SAIL
(Successful Aging Initiative for Living)

Bioengineering & Center on Aging

Dirigo Pines Retirement Community – living laboratory

Capstone students will work together to identify a technology to be developed and implement the design and construction
UMaine SAIL Partners

- Corporations
- Medical, health and human service systems, agencies and organizations
- Older adult groups, senior colleges, senior centers
- Cities and towns
- State agencies
- Professional associations
**Center on Aging**

- An interdisciplinary research center within the University of Maine
- In partnership with the Office of the VPR, the administrative core of SAIL
- Center on Aging has three focus areas:
  - Research and Evaluation
  - Education and Training
  - Service/Consultation
Head Protection
Impact Resisting Material System

Hip Protection
University of Maine SAIL
(Successful Aging Initiative for Living)
Augmentations to Prevent Falling
Enhanced Edge Detection
Enhanced Edge Detection
Enhanced Edge Detection
Remote Patient Monitoring

- Uses point-of-care monitoring devices to collect and communicate health data to caregivers and providers digitally.
- Most valuable for individuals with limited access to medical offices.
Assistive Technology: Sensors
Indoor Navigation
Augmentations to Improve Driving
Additional UMaine Aging Research Technologies

- Robotic Surgery with Disposable Surgical Robotic End Effectors and Tools
- Smart Medical Implants
- Applications of Artificial Muscles to Medical Problems
- Companion Robots
A Chance to Learn From You

You are Maine’s older adult health and human service professionals. You have your finger on the pulse on the wants and needs of the older adult community

• What are you seeing and hearing on the front lines?

• What products, devices, technologies are needed and wanted to make life safer, healthier, and more satisfying?

• What will you, yourself, want to age and thrive in your homes and communities as you grow older?
Additional Resources

AARP Innovation @ 50+

Technology and Caring for Older Adults, Senate Special Committee on Aging, Hearing 5/6/15

Aging in Place Technology Watch, Laurie Orlov
- http://www.ageinplacetech.com/

AARP Personal Technology Webpage
- http://www.aarp.org/home-family/personal-technology/

Center for Technology and Aging’s Technologies to Help Older Adults Maintain Independence Briefing Paper
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