AGING IN PLACE WORKSHOP

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Workshop designed to assess the state of aging in place technologies and identify challenges in the development and application of technologies for in-home care. The possible areas of research with prioritized recommendations for the next 5-10 years to advance the field was addressed.

Aging in Place was described as technologies to for assisting older adults and people with chronic diseases to live independently.

Sponsored by:
- National Institutes of Health (host)
- Computer Research Association (sponsor)
- National Science Foundation (collaborator)

This talk is based on the workshop and does not reflect the opinions of the NIH.
ORGANIZING COMMITTEE

- Alice Borelli, Intel
- Sara Czaja, Professor, Psychiatry and Behavioral Sciences & Industrial Engineering, University of Miami
- Ann Drobnis, Director, Computing Community Consortium
- Erin Iturriaga, NIH/NHLBI
- Jeff Kaye, Professor of Neurology and Biomedical Engineering, OHSU
- Elizabeth Mynatt, Professor of Interactive Computing, Georgia Tech, CCC Liaison
- Wendy Nilsen, NIH/OBSSR and NSF Smart and Connected Health
- Dan Siewiorek, Buhl University Professor of ECE and Computer Science, CMU
- John Stankovic, BP America Professor of CS and Co-Director of the Wireless Health Center, University of Virginia
Workshop Covered Four Main Topics:

• Designing for the population
• Sensing innovations
• Using technology to identify and support transitions in health
• Utilizing the new non-health technologies to support health
Workshop was originally conceived based on the idea that technology could be enhance health outside of hospitals and nursing homes.

- Improve and sustain health and increase the quality of life
- Allow people to live at home longer
- Reduce healthcare costs: Hospitalizations/rehospitalizations
- Reduce strain on the healthcare workforce
- Reduce caregiver burden
Findings: Changing Cultures

- Organizing opportunities the various disciplines to transform aging in place from translation of home health care to smart homes that support health.
- Changing the current mind-set so that technology in the home is an alternative to care and not just an add-on to care.
- Change the disciplinary lens that describes technology researchers as technicians and researchers as clinicians.
Findings: Personalization and Adaptation

- Recognizing that multiple research approaches are needed to address needs of people who are most ill, managing chronic diseases and sustaining health and wellness.

- Creating more personalized technology to serve diverse populations, while creating evidence-based, generalizable solutions from which to adapt.

- Creating solutions with the principles of ‘future’ proofing.

- Designing technologies to empower patient, caregivers and providers with timely and actionable information.

- Ensuring technology does not create a ‘digital’ divide or disadvantages among groups.
Findings: Evidence

• Creating new robust methods of analysis and sensor-driven decision analysis to create predictive, personalized models of health.

• Validating the effectiveness and reliability of technologies by developing methods of rapidly generate evidence.

• Developing ‘testbeds’ to efficiently, economically and systematically explore the use of technologies and involve the community in the research.

• Thinking about technologies more broadly, including integrating technology into other healthcare services and embedding health tools and data collection into the “internet of things”.

FINDINGS: EVIDENCE
Leverage existing resources to assess the effectiveness of in-home technologies for improving the health by:

- a) Validate technologies in existing clinical trials;
- b) Develop ancillary clinical trials to utilize established patients or health control cohorts;
- c) Collaborate with all stakeholders, including government agencies, non-government institutes, and industries;
- d) Explore opportunities to create new models of evaluation that take advantage of existing population cohorts deploying baseline technologies that would allow for both basic and applied research.

Develop new evaluation techniques for rapidly developing technologies.

Develop the analytics necessary provide timely, personalized, actionable information, with reliable interfaces and systems to support evidence-based decision-making.

Use the technologies to collect dense, longitudinal data on health and aging to enable discovery science that will transform health and aging research.

Develop a generalized matrix for cost analysis of technologies, for example using the “Saved Caregiver’s Time” as a standard to measure the cost-saving of a technology.
• Bring in expertise from technology design, human-computer interaction, health literacy & human factors.

• Understand the needs, preference, and context of target users.

• Engage the users, caregivers, providers, and regulatory agencies, to identify factors and outcome markers for success/effectiveness measurement of a technology.

• Design technologies to motivate user engagement and become more aware of their own health.

• Establish frequent dialogues between innovators, research funding agencies, and government regulatory agencies to discuss study designs and identify potential collaborations.
THANK YOU!
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