

AGING IN PLACE WORKSHOP

At the National Institutes of Health
September 9-10th, 2014

Wendy Nilsen, PhD
Office of Behavioral and Social Sciences
Research



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BACKGROUND

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.



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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



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FINDINGS

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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



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DRIVERS

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 CULTURE

A stylized, light-colored plant illustration with several leaves and a cluster of small, round buds, set against a dark brown background.

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 that describes technology researchers as technicians and researchers as clinicians.



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FINDINGS: PERSONALIZATION & ADAPTATION



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.



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FINDINGS: EVIDENCE

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”.



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WORKGROUP RECOMMENDATIONS : TECHNOLOGY / ANALYTICS

- 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 stake holders, 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.



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WORKGROUP RECOMMENDATIONS : HUMAN SIDE

- 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.



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THANK YOU!

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