Introduction to Evidence-Based Mobile and Web Health Design and Analysis Minitrack

Janet Brigham
Oregon Research Institute
jzbrands@earthlink.net

Benjamin Schooley
University of South Carolina
Ben.Schooley@sc.edu

Rochelle Rosen & Beth Bock
Miriam Hospital & Brown Univ.
Rochelle.Rosen@Brown.edu
Bbock@Lifespan.org

Abstract
The objective of this minitrack is to address the challenges facing mobile and Internet-based health-related applications and devices. Healthcare professionals and consumers alike are vulnerable to unproven methods that have not been subjected to testing for usability, efficacy, effectiveness, or positive outcomes. The papers in this minitrack explore ways to encourage adherence to treatment protocols, employment and engagement of persons with disabilities, improve monitoring of communicable diseases, and design interactions that draw on patients as stakeholders.

1. Introduction
The mobile and Internet-based health landscapes are evolving quickly. Consumers and practitioners alike are incorporating mobile devices, sensors, and Websites into their daily routines in ways that were not possible just a short while ago.

An individual might spend 15 minutes or less per year with a primary-care physician, whereas the same person may have nearly constant contact with a mobile device, and hours of contact per day with an Internet-connected computer. Both Web and mobile health interventions have the potential to strengthen the connection between healthcare providers and health consumers, and to provide access to information and assistance nearly anytime.

Only a small number of health Websites and apps are built on an evidence base of scientific data and established care guidelines, or are tested for efficacy, effectiveness, or similar meaningful outcomes. This not only leaves healthcare professionals and consumers vulnerable to unproven methods, but it crowds out potentially useful novel approaches. A parallel need exists for methods of evaluation across the design, development, and implementation continuum for interfaces that do not hamper innovation and take into account the pace of technological change.

The objective of this minitrack is to address these challenges with research papers encompassing novel methodological, conceptual, and design research studies on Internet and mobile health. The following presentations comprise the minitrack:

- “Formative Research for mHealth HIV adherence: the iHAART App,” by Rochelle Rosen, Megan Ranney, and Edward Boyer, reports qualitative research finding that user understanding of, and reaction to, app visual content was essential to adaptation and design an mHealth app for HIV patients with histories of substance abuse. They report that a balance of provided and requested information is important to maintain interest and support adherence.

- “Social Impact Information as the Cause for the Formation of Ties in Enterprises Employing Individuals with Disabilities,” by Shogo Kamei, Masakazu Ohashi, and Mayumi Hori, examines the innovation of processes, by a case study the use of information systems by companies, a collaboration between Ben & Jerry’s Japan and Swan Bakery, which employs individuals with disabilities. The paper also analyzes Carepro, which developed a simple medical examination.

- “Real-Time Flu Monitoring System and Decision Informatics,” by Sonya Hsu, Ryan Benton, and Raju Gottumukkala, presents a system for monitoring flu, using real-time updating capability, incorporating prediction, and integrating monitoring and predicting capabilities in one system with layers of access rights to different users.

- “Systematic Inquiry for Design of Healthcare Information Systems: an Example of Elicitation of the Patient Stakeholder Perspective,” by Jordan Eschler, Katie O'Leary, Logan Kendall, James Ralston, and Wanda Pratt: By using systematic inquiry, the authors learned to more effectively elicit patient stakeholder needs and goals to inform the design of health care information systems.