

Project Title: Personal Health Records and Elder Medication Use Quality
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Organization: University of Iowa
Mechanism: RFA: HS07-007: Ambulatory Safety and Quality Program: Enabling Patient-Centered Care through Health Information Technology (PCC)
Grant Number: R18 HS 017034
Project Period: 09/07 – 08/10
AHRQ Funding Amount: \$1,199,999
Summary Status as of: December 2008

Strategic Goal: Develop and disseminate health IT evidence and evidence-based tools to support patient-centered care, the coordination of care across transitions in care settings, and the use of electronic exchange of health information to improve quality of care.

Business Goal: Implementation and Use

Summary: The project, approximately mid-way through its progress, is evaluating the ability of a personal health record (PHR) to support elderly patients' medication adherence, medication use quality, and medication management behaviors. The team is testing the hypothesis that successfully maintaining a PHR provides reinforcement to build self-efficacy for medication therapy management (MTM), that the act of keeping a PHR up-to-date increases patient knowledge about medications, and that information gained through using the PHR allows patients to shift the balance of their beliefs about medication from concern toward necessity.

Phase I of the project consists of a series of patient, caregiver, and provider focus groups to identify current patient and physician medication management practices, barriers to usage of PHRs, and physician office workflow issues. Through a careful evaluation of the feedback received during these sessions, the project team identified patients' and providers' wants and needs with respect to the varied functionalities of these products and will develop a formal measure of the patients' role in maintaining their health. The project team also conducted an environmental scan of commercially available PHR products to identify currently existing core PHR functions available to elderly patients. From the information collected, the project team selected the best commercially available PHR, based on the products that met the criteria of the identified core functions as well as on usability as evaluated by experts on older adult computer interactions.

Phases II and III are hands-on, interactive trials of patients' interaction with the product identified in Phase I, the MiVIA PHR licensed to Community Health Resource & Development Center (CHRDC). The team will test the existing PHR by measuring elderly patients' interaction with the technology and their resulting self-activation with respect to medication management. Based on feedback received during Phase I, the project team is working with the PHR developers to incorporate patient and provider suggestions into the product to maximize its usability and value to the end users. Phase II is a randomized, controlled trial comparing older adults' usage of the PHR across six practices within a practice-based research network (PBRN). The team will compare those using the PHR with those receiving usual care across outcomes such as patient-reported MTM behaviors, patient beliefs about their medications, medication adherence, patient-physician communication, as well as other technology utilization measures. Core activities to be analyzed as behavior-based measures of patient participation include: keeping an active medication list; recording the purpose and treatment goal of each medication; keeping track of symptoms and goal achievement; reporting side effects to providers; asking questions about new medications; looking up information about medications; and refilling medications on time.

Phase III is a usability study of the PHR via a human-computer interaction (HCI) laboratory assessment of elderly adults to identify the challenges patients face when using the PHR and the support needed to facilitate usage.

Specific Aims

- Develop, through patient and provider focus groups, measures of patient medication therapy management behaviors and patient self-efficacy for medication therapy management. **(Ongoing)**
- Compare, in a trial in a primary care PBRN, the 6- and 12-month patient-reported medication therapy management behaviors, medication adherence, patient- and physician-centric medication quality indicators, patient self-efficacy for medication therapy management, and patient beliefs about medication, among those randomized to a current, representative PHR system vs. those randomized to usual care. **(Upcoming)**
- Investigate the usability of this PHR system in a human-computer interaction laboratory compared with alternative prototypes developed through participatory design with older adults of varying ability levels, and associate PHR performance with measures of cognitive, motor, and perceptual ability. **(Ongoing)**

2008 Activities: The project team developed protocols for, recruited for, and conducted focus groups with older adults, caregivers, and family physician/office staff on PHR usage, medication management activities, and physician office workflow issues. The team has conducted a thorough qualitative analysis of the focus group transcripts, using thematic coding to identify perceptions of the patient's role in medication management and the obstacles to filling that role through use of a PHR. The team established criteria for and conducted an environmental scan of existing PHRs, evaluating products with respect to criteria abstracted from the focus groups, as well as determinations of compatibility in terms of cost, data management and transfer, available functionalities, and usability. After this analysis, the team decided to use the MiVia PHR for the trial. They are in the process of implementing changes to the product's functionality and user-interface, including branding the product as the "Iowa PHR." In addition, the project team has finalized the HCI design; completed development of protocols, instrumentation, and recruitment materials; and obtained approval to begin HCI testing. The HCI will incorporate a preliminary assessment of the PHR and add an age-based comparison (18-25 vs. 65+) to better anticipate potential issues and barriers to PHR use among older adults.

Preliminary Impact and Findings: No impacts or findings have yet been reported.

Selected Outputs

AHRQ 2008 Annual Conference presentation: Personal Health Records for Medication Use: Views from Elders and Their Physicians ([PowerPoint@ File](#), 1.8 MB; [Web Version](#)).

Grantee's Most Recent Self-Reported Quarterly Status: The project is somewhat under spent, approximately five to twenty percent. Based on focus group results, the project team has delayed activities related to the randomized controlled trial for several months. A considerable proportion of the project's estimated costs are related to trial activities.

Milestones: Progress is mostly on track.

Budget: Somewhat under spent, approximately 5 to 20 percent.