

Improving Post-Hospital Medication Management of Older Adults With Health Information Technology

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Organization:	University of Massachusetts Medical School - Worcester
Mechanism:	RFA: HS07-006: Ambulatory Safety and Quality Program: Improving Quality Through Clinician Use of Health Information Technology (IQHIT)
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Project Period:	September 2007– August 2011, Including No-Cost Extension
AHRQ Funding Amount:	\$1,199,952
Summary Status as of:	December 2010

Target Population: Elderly*

Summary: The project focuses on developing and evaluating the value of an enhanced health information technology (IT)-based medication reconciliation system interfaced with an ambulatory electronic medical record (EMR). It utilizes the EpicCare Ambulatory EMR, which is certified by the Certification Commission for Health Information Technology. The project employs a randomized, controlled trial design to test the health IT-based transitional care intervention with enhanced medication reconciliation and therapeutic monitoring alerts to improve the quality and safety of patient monitoring and medication management. It also focuses specifically on the transition from inpatient to ambulatory settings for older adults who have multiple comorbid conditions and are prescribed high-risk medications. This research allows for the examination of an integrated health IT intervention on the quality of followup, outpatient clinician workflow, occurrence of adverse drug events (ADEs), and health care utilization, to gain insight into the effective use of clinical alerts and coordinated delivery of actionable information to outpatient clinicians in the management of ambulatory elderly patients subsequent to hospital discharge.

The project's health IT intervention begins with medication reconciliation at the time of hospital discharge. Complex information management and coordination of data sharing across multiple settings often hamper clinician workflow in the post-hospitalization setting. The intervention addresses these special challenges. Specifically, the intervention automates key steps in the transition of care from the hospital to home, including: 1) expediting and facilitating discharge followup appointment scheduling, including monitoring for no-shows; 2) generating medication lists that alert the primary care provider to key therapeutic additions; and 3) generating patient-specific therapeutic monitoring recommendations for high-risk medications in the post-hospitalization period.

Specific Aims:

- Evaluate the impact of automated scheduling alerts on the rate of followup to an outpatient provider within 14 days of hospital discharge. **(Ongoing)**
- Evaluate the impact of automated monitoring alerts on the prevalence of appropriate monitoring for selected high-risk medications at 30 days from the time of hospital discharge. **(Ongoing)**
- Evaluate the impact of a health IT-based transitional care intervention on the incidence of ADEs within 45 days of hospital discharge. **(Ongoing)**

- Evaluate the impact of a health IT-based transitional care intervention on the rate of hospital readmissions and emergency department visits within 30 days of discharge. **(Ongoing)**
- Assess (by level of comorbidity, number of medications, and use of specific high-risk medications) whether a health IT-based transitional care intervention is more effective in subgroups of patients. **(Upcoming)**
- Determine costs directly related to the development and installation of the health IT-based transitional care intervention. **(Ongoing)**

2010 Activities: The project staff completed the development of the therapeutic monitoring guidelines and standards which were reviewed and approved by the research pharmacists, Fallon Clinic (part of the UMass Memorial Medical Group) pharmacy leadership, and medical staff leadership. The Fallon Clinic IT team has used the guidelines to program the intervention.

Preprogramming for the EMR was completed by the Fallon Clinic IT team, and the intervention was launched. Monitoring alerts underwent beta testing for validity, accuracy, and specificity, and the research and programming teams reviewed and refined alerts to minimize alert fatigue in the actual intervention. The programming team developed tracking reports for the research team and the pharmacist abstractors to allow them to follow details of the clinical trial including enrollment and randomization. The project staff began to screen and enroll eligible patients and perform randomization.

Training of the research pharmacists was completed between June and August 2010. Abstraction procedures and the navigation of the EMR were reviewed. The clinical research pharmacists began EMR chart review for ADEs. In addition, the project team is examining outcomes of hospital discharges during the baseline period, defined as the one year prior to the initiation of the intervention. The project team is also reviewing the data collected from project members regarding the time invested relevant to launching the intervention for return on investment analyses.

Grantee's Most Recent Self-Reported Quarterly Status (As of December 2010): The project is progressing on track, is meeting all milestones, and is on time with all tasks. Project spending is roughly on target. The project is entering its one-year no-cost extension and is focused upon continuing implementation of the intervention, and collecting and analyzing data.

Preliminary Impact and Findings: In July 2010, *The American Journal of Managed Care* published the study manuscript detailing the therapeutic monitoring guidelines.

Strategic Goal: Develop and disseminate health IT evidence and evidence-based tools to improve the quality and safety of medication management via the integration and utilization of medication management systems and technologies.

Business Goal: Implementation and Use

* *AHRQ Priority Population*