

## Using Information Technology for Patient-Centered Communication and Decisionmaking about Medications

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<b>Principal Investigator:</b>	Wolf, Michael, Ph.D.
<b>Organization:</b>	Northwestern University
<b>Mechanism:</b>	RFA: HS07-007: Ambulatory Safety and Quality Program: Enabling Patient-Centered Care through Health Information Technology (PCC)
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<b>Project Period:</b>	September 2007 – August 2011, Including No Cost Extension
<b>AHRQ Funding Amount:</b>	\$1,199,997
<b>Summary Status as of:</b>	December 2010

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### Target Population: Adults

**Summary:** Medication errors are a major source of patient injury, hospitalization, and death. Medication management in primary care is extremely complicated, given the continually expanding array of available therapies, fragmentation of care, proliferation of information sources, and numerous obstacles experienced by patients (e.g., cost). This study integrates interventions that target patients, providers, and the overall practice system in an effort to improve the medication management process.

The overarching objective of this multicomponent intervention is to develop a protocol to reconcile medications through the phases of the patient-provider clinical encounter. The project provides patient education materials and medication lists that are automatically extracted from the Certification Commission for Health Information Technology-certified Epic Systems' electronic medical record (EMR), EpicCare. Patients receive the materials in advance of their physician visit at the multispecialty primary care center. Patients then review the medication information contained within the system, indicating if there are any discrepancies or if they have any related questions or concerns. The nurse reviews the patient-provided information and places the output into the rooming sheet for the physician. The system encourages physicians to engage in shared decisionmaking by including prompts for eliciting questions and concerns as well as tailoring treatment plans to match patients' needs and abilities. The physician will then clarify any issues with the patient and update the patient's medication list in the EMR. If a new medication is prescribed, the system will generate a plain-language medication information sheet for the patient. The information sheet is automatically generated through project-developed "dot phrases" (system macros that automatically fill in descriptive text prompted by key words) in the EMR, an enhancement to the existing functionality of the Epic EMR.

The clustered, controlled clinical trial will be randomized at the "pod" level to reflect the clinic's organization into four areas (pods) with separate nursing staff and physicians. Through post-visit interviews and data extracted from the EMR, the project will assess post-visit discrepancies in the medication list, the patient's functional understanding of their medication regimen, questions on adherence and safety, and a series of process measures to assure that the intervention is translatable to other organizations.

### Specific Aims:

- Develop and test a multimedia program (which has been since revised to an educational print piece) to help patients understand the importance of both giving and receiving accurate information about

medications (pre-visit patient intervention). **(Achieved)**

- Use the EMR to encourage patient-centered medication management and extend the EMR medication management capability by training nurses to engage in a patient-centered review of current medications immediately before a patient sees the doctor. Leverage the EMR by developing a template that physicians can easily access to engage in a patient-centered discussion about new medications under consideration. **(Achieved)**
- Work with the practice-based research network to disseminate and track the use of effective interventions, and create pathways for facilitating national distribution to other practices. **(Ongoing)**

**2010 Activities:** The team continued to engage in discussions with the Information Technology (IT) Leadership Team and General Internal Medicine practice directors to discuss options for pre-populating the EMR with medication information sheets and how they will be used by the physicians during the intervention. The study team also utilized health literacy experts to provide interim and final feedback on content and format. Once completed, the medication information sheets were pre-populated into the EMR by the IT team.

A second pilot test was completed in January 2010 with two physicians and feedback was collected from the physicians to refine the intervention. A training session was performed at a physician meeting and followup e-mails were sent out to clarify any concerns. A trial run of the intervention was implemented in February 2010 to work out final problems and address physicians' concerns before starting recruitment.

The team modified the intervention so patients could receive the educational print folder at the end of their visit. The previous protocol had patients obtain this folder when they checked in for their visit and many patients lost or misplaced it by the end of the visit.

Data collection for the medication reconciliation portion of this study started in February and was completed in July. A total of 163 patients were recruited; 88 control and 75 intervention. The data are currently being analyzed. Data collection for the patient knowledge portion of this study began in December 2010 and will take approximately 6 months to complete.

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**Grantee's Most Recent Self-Reported Quarterly Status (as of December, 2010):** Progress is mostly on track and the project is meeting most of its milestones. Project spending is roughly on target.

**Preliminary Impact and Findings:** One hundred and forty-four patients were enrolled with 69 in the control group and 75 in the intervention group. An additional 19 patients were excluded from analysis because they were seen by residents. Overall, 85 percent of patients had some type of discrepancy in their EMR medication list; however, no significant differences were found between the control and intervention groups in overall discrepancies. Types of discrepancies have been broken down to omissions, such as medications taken that are not on their list; commissions, such as medications on their list that they are not taking; and duplications. Overall, 18 percent of patients had at least one omission, 44 percent had at least one commission, and 29 percent had at least one duplication. No significant differences were found between control and intervention groups in type of discrepancy. The current medications evaluation study data are still being analyzed.

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

**Business Goal:** Implementation and Use