

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

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Organization:	Northwestern University
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Summary: Medication errors are a major source of patient injury, hospitalization, and death. Medication management in primary care is extremely complicated because of 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 integrated 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 was to develop a protocol to reconcile medications through the phases of the patient-provider clinical encounter. The project provided patient education materials and medication lists automatically extracted from Epic Systems' electronic medical record (EMR), EpicCare to adults enrolled in the project. In advance of their physician visit at a multispecialty primary care center, patients received the materials, reviewed the medication information contained within the system, and indicated if there were any discrepancies or if they had any related questions or concerns. The nurse reviewed the patient-provided information and placed the output into the rooming sheet for the physician. The system encouraged physicians to engage in shared decisionmaking by including prompts to elicit questions and concerns and ways to tailor treatment plans to match patients' needs and abilities. The physician clarified any issues with the patient and updated the patient's medication list in the EMR. When new medication was prescribed, the system generated a plain-language medication information sheet for the patient. The information sheet was automatically generated through project-developed "dot phrases" (system macros that automatically fill in descriptive text prompted by key words) in the EMR, an enhancement made to the existing functionality of the EpicCare EMR.

The clinic was organized into four areas (pods) with separate nursing staff and physicians and the clustered, controlled clinical trial was randomized at this "pod" level. Through post-visit interviews and data extracted from the EMR, the project assessed post-visit discrepancies in the medication list, the patient's functional understanding of his/her medication regimen, questions on adherence and safety, and a series of process measures to verify that the intervention was translatable to other organizations.

Specific Aims:

- Develop and test a multimedia program (which was 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. **(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. **(Achieved)**

2011 Activities: The 12-month no-cost extension enabled data collection activities to be completed and the team to focus on obtaining data reports and cleaning data. There were some difficulties obtaining the final target recruitment numbers. At one site, aspects of the intervention were turned off when the EMR was rebooted; however, there was no effect on the overall progress and data quality. As last self-reported in the AHRQ Research Reporting System, project progress and activities were on track in some respects but not others and project budget spending was on target. All project activities were completed when the project ended in August 2011.

Impact and Findings: The researchers on this project found gains in reducing discrepancies related to prescription omissions in the medication list. Fewer gains were achieved in reducing discrepancies related to removing medicines no longer being taken and adding omitted non-prescription regimens patients report taking daily. Key informant interviews alluded to physician barriers not addressed by the intervention; for example, desire not to remove another physician's order, lack of perceived salience of non-prescription medicines, lack of time for more complicated regimens, and failure to change the EMR at the time of the visit. Findings to date have substantial value in understanding how best to change existing practices to ensure medication reconciliation, education, and counseling when new medication is prescribed.

Several-hundred medication sheets were developed through this project. These are tangible products that have been widely accepted by physicians as assisting in improving and managing patient care.

Target Population: Adults

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
