

Medication Reconciliation to Improve Quality of Transitional Care

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Summary: Medication errors account for approximately 20 percent of all medical errors in the United States each year. This significant source of error can cause injury or even fatalities and happens in all types of health care settings, including patient transitions between locations or care levels within a facility. Recent studies have shown that electronic medication reconciliation (MR) for hospitalized patients can decrease medication discrepancies and significantly improve outcomes in transitional and ambulatory care. Relatively little is known, however, about the extent to which MR systems improve clinical outcomes.

This study seeks to integrate an electronic MR system with an electronic prescribing (e-prescribing) system and modify an electronic health record (EHR) to incorporate medication reconciliation. The project is taking place within Wishard Health Services, a safety net provider for residents of Marion County, Indiana that includes Wishard Hospital and eight primary ambulatory care community health centers. This project has a technical and a clinical team, both of which Dr. Weiner is a member. The clinical team provides input and guidance for the technical team, which meets weekly to discuss and advance the system's development. Because the proposed system requires a formative evaluation, the initial system is being reviewed by a small group of physicians and nurses who are not part of the study teams.

The randomized study design allows for a controlled comparison of electronic MR and usual care. Participants include patients and their inpatient and ambulatory care providers. While the intervention is based in an emergency department and hospital, it targets transitional care and is meant to improve outcomes for both inpatient and ambulatory care. Providers are surveyed before and after the intervention about satisfaction with care, managing medications, and usefulness of local information systems in managing medications. Additional analysis will look at changes in the rates of adverse drug events, erroneous discrepancies, and omissions in a patient's medication list between the time of discharge and return to ambulatory care. Associations between interventions and outcomes will be summarized regarding factors related to payer, race, gender, and age. The study will inform the question of whether electronic facilitation of inpatient MR improves completion of MR and decreases the incidence of drug-related medical errors.

Specific Aims:

- Integrate an electronic medical reconciliation system with an e-prescribing system. **(Achieved)**
- Modify an EHR system to incorporate medication reconciliation. **(Achieved)**
- Conduct a randomized controlled trial of the medical reconciliation system. **(Ongoing)**
- Determine whether electronic facilitation alters medical reconciliation and the incidence of medication errors in ambulatory care. **(Ongoing)**

2011 Activities: In an effort to integrate the MR system with e-prescribing, the study team made several refinements to the user interfaces to increase the speed of the system, improve the dictionary of medications, and refine the text-based output. The team also continued to make efforts to increase accessibility of pre-admission medication lists and allow the system to integrate data collection from different pharmacies. Both of these goals were achieved.

To inform the intervention design, the project team implemented a brief survey in 2010 to ask physicians about satisfaction with local tools and resources for managing inpatient medications, ease of managing medications, and accuracy of medication lists as noted in medical records. More than 200 survey responses were received in 2011 and analysis of preliminary survey results was done. The project team is conducting focus-group discussions to gain additional detailed feedback about medication management and the project. Two of the focus groups have met and at least one additional group is planned for 2012.

Meanwhile, the clinical trial is underway, with more than 800 uses of the intervention system logged at the end of 2011, among approximately 5,000 admissions. Multiple training sessions have been conducted to introduce the study to intervention team members and evening float physicians. There has been a gradual increase in the use of the system. During the last quarter of 2011, the study staff shadowed four users for several hours and recorded observations and suggestions about how to improve the system.

As last self-reported in the AHRQ Research Reporting System, the progress of project activities is on track. The budgeted funds are significantly underspent, however with some of the more time-intensive activities underway in 2012, the project team anticipates that the rate of spending will increase.

Preliminary Impact and Findings: There are no project findings to date.

Target Population: Adults, Safety Net

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: Knowledge Creation
