

Using Health Information Technology to Perform Medication Reconciliation

Findings from the AHRQ Health IT Portfolio

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Prepared By:

AHRQ National Resource Center for Health Information Technology

Authors:

Anita Samarth, Clinovations
Erin Grant, Booz Allen Hamilton

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HEALTH IT

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BACKGROUND

Medication reconciliation is a formal process or technique used by health care providers and pharmacists to gather a complete and accurate list of a patient's prescribed and home medications; to identify discrepancies in drug regimens in different levels of care, care settings, or points in time; and to use that information to inform prescribing decisions and identify and prevent medication errors.¹ This report illustrates the different approaches that AHRQ-funded health information technology (health IT) projects are taking to implement and evaluate medication reconciliation processes through the use of health IT.

AREAS OF CURRENT INVESTIGATION

Fifteen grantees were identified by the AHRQ National Resource Center for Health Information Technology (NRC) as having medication reconciliation as an aspect of their projects. Grantees were asked to identify the purposes and objectives for including medication reconciliation as a focus of their health IT project. These goals and objectives are described in Table 1.

Table 1: Grantee Goals and Objectives Summary

IMPROVED CLINICAL OUTCOMES	IMPROVED WORKFLOW AND CLINICAL PROCESSES	IMPROVED DECISIONMAKING AND COMMUNICATION
<ul style="list-style-type: none">▪ Reduce adverse drug events▪ Prevent hospital readmissions or visits to the Emergency Room following discharge▪ Use medication reconciliation to improve patient status on certain preventive measures	<ul style="list-style-type: none">▪ Improve clinical workflow▪ Improve care coordination during transitions between sites of care	<ul style="list-style-type: none">▪ Improve decisionmaking at the point of care▪ Increase patient and clinician knowledge and communication about current medications

Despite improvements in health IT functionality, grantees found that performing medication reconciliation still presented challenges in the following areas: using data provided by patients; electronic health record (EHR) system readiness; care transitions; and organizational roles and responsibilities.

USING DATA PROVIDED BY PATIENTS

Some of the grantee projects build upon the concept that the patient is the best source of information for tracking medication lists. These projects are using patient-centric applications to facilitate the exchange of information between the patient and the provider in a way that limits omissions in recall by the patient during the exam and also allows for time during the exam to

¹ Boockvar KS, Carlson LaCorte H, Giambanco V, et al. Medication reconciliation for reducing drug-discrepancy adverse events. *Am J Geriatr Pharmacother* 2006; 236-43.

discuss concerns, adherence issues, and the care plan versus simply documenting a patient's current medication list. Grantee methods to collect patient data, include personal health records (PHRs), interactive patient portals, integrated voice response (telephony), and in-person review of printed medication information.

ELECTRONIC HEALTH RECORD SYSTEM READINESS

Grantees noted that EHR systems, particularly in the inpatient setting, enabled documentation and communication of medication information, but were very limited in their ability to perform reconciliation within the EHR. Grantees reported that EHR systems included the capability to maintain active medication lists and order medications, but many systems lacked functionality to support electronic medication reconciliation or lacked the ability to capture information needed to report medication reconciliation quality measures.

Recommended changes to commercially available EHRs include the ability to (1) view different lists side-by-side, (2) view medication history and dosages in chronological order similar to an online "flowsheet," (3) group medications by code to facilitate comparison and reconciliation, and (4) determine that medication reconciliation has been completed, even when no changes have been made to the list.

CARE TRANSITIONS

A major challenge for both inpatient and outpatient organizations is integrating reconciliation via health IT without compromising efficiency. The AHRQ projects are leveraging different health IT tools and technologies to enable reconciliation to occur with minimal workflow disruption and to improve the communication of medication information to the next provider upon patient discharge or upon completion of an ambulatory office visit.

Grantee methods for communicating the reconciled medication list include providing a hard copy of the list to the patient, leveraging patient-centered technology and interactive voice response, accessing the ambulatory EHR within the inpatient settings, and generating alerts and notifications for providers within the EHR when information changes.

Despite advances in technology and improved processes, challenges exist. The first challenge is communicating changes made to a long medication list to the next provider, which often occurs when transitioning a patient from a long-term care facility. The second challenge arises when inpatient and outpatient facilities do not share an EHR system, limiting the electronic transmission of the reconciled list to the next provider. Third, even when the same technology is used within a

health care system the visual presentation of the data on the screen can make it difficult to determine when reconciliation was performed and by whom.

ORGANIZATIONAL ROLES AND RESPONSIBILITIES

When introducing any new process, identifying the different roles and responsibilities is critical to ensuring each step is completed in a way that is most effective for the organization or individual. Grantees reported some challenges in this area, including physician resistance or skepticism of the medication list's accuracy, specialists performing reconciliation for medications with which they are not familiar, limited training provided to clinicians on new medication reconciliation processes using an EHR, and length of time and number of resources required to perform medication reconciliation during an office visit or at the point of discharge. To overcome these challenges, different organizational roles and responsibilities were explored to include assigning different clinical staff the role of updating the medical record during a visit or at discharge, having patients use PHRs to begin reconciliation prior to a visit, and providing patients with the medication list while they are in the waiting room.

CONCLUSION

Medication reconciliation has traditionally been a manual and paper-based process that can be supported by automation through the use of health IT. Grantees noted that while complete automation of the medication reconciliation process would be ideal, the majority of the projects focused on automating at least a piece of the process using their selected health IT intervention. However, the development and adoption of additional functionality, medication standards, and interoperability specifications are needed to facilitate reconciling of medications electronically within EHRs.