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ADVANCES IN PHARMACY PRACTICE

Addressing meaningful use and maintaining an accurate medication list in primary care

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ABSTRACT

Objectives: The primary objective of this project was to determine the difference in medication list accuracy between an initial and follow-up medication reconciliation visit in a primary care office. Secondary objectives were to identify the difference in medication-related problems most commonly encountered during the visits, factors that may influence patient understanding of their medication regimen, and physician perceptions of the medication review visit.
Setting: Quasi-experimental study part of a larger pilot project to address the ability of how health information technology can be used to maintain an active medication list.
Practice Description: Three family medicine residency clinics in the Midwest. Adult patients with diabetes or chronic obstructive pulmonary disease who had 6 or more long-term medications listed in the electronic health record (EHR) were recruited to participate.
Practice Innovation: An initial comprehensive medication reconciliation visit was conducted by a resident physician and a pharmacist with the goal of ensuring an accurate, easy-to-follow, electronically developed medication list. A follow-up visit with the pharmacist occurred 3-6 months after the initial visit.
Evaluation: Medication list accuracy and medication-related problems were assessed at the initial and follow-up visits. Patient-related factors that could affect medication understanding were collected at the initial visit with status of enrollment in the EHR patient portal.
Results: Fifty-seven of 65 patients completed the study. The number of patients with an accurate medication list increased from 40% to 49% ($P = 0.38$). The number of medication-related problems decreased from 146 to 91 ($P < 0.001$). The use of special tools (e.g., pillboxes) was associated with fewer medication regimen errors ($P = 0.036$). Patients enrolled in the EHR patient portal were more likely to know the purpose of their medications as compared with those not enrolled ($P = 0.019$).
Conclusion: An intentionally scheduled medication review with a primary care provider and pharmacist did not significantly improve the accuracy of the medication list, but it was associated with fewer drug-related problems.

Beginning in 2011, Centers for Medicare & Medicaid Services introduced the Electronic Health Record (EHR) Incentive Program as a strategy to encourage eligible professionals to adopt, implement, upgrade, and demonstrate meaningful use of the EHR.[1] According to Centers for Medicare & Medicaid Services, meaningful use has 4 distinct goals, including improving quality, safety, and efficiency; engaging patients and family; maximizing care coordination and population health; and maintaining the privacy and security of health information.[2] In addition, 1 key objective of meaningful use is to use the EHR to maintain an active medication list, which should reflect all current medications the patient is taking.

Studies from before implementation of meaningful use programs estimated up to 95% of medication lists in the ambulatory setting are incomplete or inaccurate.[3,4] Current

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Key Points

Background:

- The Centers for Medicare and Medicaid Services encourage the meaningful use of electronic health records to maintain accurate electronic medication lists.
- Previous studies have shown that most medication lists in the ambulatory care setting are inaccurate.
- New methods are needed to improve the accuracy of outpatient medication lists.

Findings:

- A dedicated outpatient medication reconciliation visit did not improve medication list accuracy, but it did decrease medication-related problems.
- Encouraging the use of pillboxes and electronic patient health portals can decrease errors in medication regimens and improve medication understanding.

literature on how the EHR might support the maintenance of an active medication list is lacking; however, the perspective of health professionals in the field indicates that the quality and accuracy of medication lists produced from the EHR are often poor and may ultimately risk patient safety.[5]

Specific strategies for improving the accuracy of medication lists have been a topic of debate for many years. A survey of ambulatory care providers found interest in a module within the current EHR that could be accessed by other providers regardless of which EHR they use, a web-based repository or "medication home" not integrated into an office-based EHR that would be accessible to all providers, and a portable device that would be carried by the patient and updated electronically as possible solutions for making medication lists accessible to all providers a patient may encounter.[6]

Medication reconciliation with a trained health professional is 1 technique that has been widely used to improve medication list accuracy, although the consistency and efficiency of this process in the ambulatory care setting are not clear. In addition, information captured from medication reconciliation encounters is often not shared with the patient or providers outside the site where the visit occurs.[7]

Patient engagement in "medication self-management," or the extent to which a patient takes medications as prescribed, is another crucial component to maintaining an accurate medication list.[8] To improve patient engagement in the management of their medications, patients should know the name, administration schedule, and indication for all medications they are taking. Prior studies have shown that greater than 75% of patients have discrepancies between the medical record and the patient's own medication list. These discrepancies have been correlated with poor control of chronic health conditions.[9] Recognizing current issues with medication list accuracy and meaningful use of the EHR, the purpose of this project was to evaluate the effects of an intentional medication reconciliation visit in primary care on medication list accuracy using an approach that incorporates the EHR.

Objectives

The primary objective of this project was to determine the difference in medication list accuracy between initial and follow-up visits. Secondary objectives were the difference in medication-related problems most commonly encountered during the visits, factors that can influence patient understanding, the use of medications, and physician perceptions of the medication review visit.

Setting

This was a quasi-experimental study that was part of a larger mixed-methods quantitative–qualitative pilot study being conducted to address the ability of how health information technology (HIT) can be used to maintain an active medication list.

Practice description

The study took place at 3 family medicine residency clinics in the Midwest from January 2015 to February 2016. All the included practice sites use EHR systems that offer a patient portal to access personal health records and medication lists.

Practice innovation

Patients were recruited for this project using diabetes and chronic obstructive pulmonary disease registries. English-speaking patients 18 years of age and older who had 6 or more long-term medications listed in the EHR were contacted by office staff members using a prepared script. Patients were excluded if they were younger than 18 years or unable to speak English.

Interested patients were scheduled for a joint resident physician–pharmacist visit and told to bring all prescription, over-the-counter, vitamin, and herbal medications to their appointment for review. A comprehensive medication reconciliation was completed during the visit, which involved asking patients to use medication bottles to describe the medications they are taking, how they are taking them, and the indication for each medication. Medications were screened for appropriateness on the basis of patient health conditions. The medication list in the EHR was updated to reflect medications the patient was actually taking, including over-the-counter medications. The primary role of the physician during the initial visit was to authorize immediate changes in the medication regimen and to order laboratory tests or monitoring parameters as deemed necessary from the medication review. Participants left the visit with a copy of an updated "patient-friendly medication list" (Figure 1). A follow-up visit with the pharmacist was conducted 3-6 months after the initial visit to reassess accuracy of the medication list and patient understanding of their medication regimen. Student pharmacists and pharmacy residents were used throughout the process to supplement the pharmacist when possible. A $25 gift card was provided to all patients who completed both the initial and follow-up visits.

Evaluation

Institutional review board approval for this project was granted by Michigan State University, Ferris State University,