

A Call for a Statewide Medication Reconciliation Program

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Medication reconciliation is the process of maintaining the list of medications a patient takes. Few clinical tasks are as important—or as deceptively simple. It involves knowing which medications have been prescribed; their dosages, frequencies, and durations; interactions between medications; whether a patient has actually filled the prescriptions; and whether patients have been taking them as directed. In our clinical practice, the peeved patient will say to us, “I take a white pill, a brown pill, and a little blue pill. I don’t know what the names are, doc. Don’t you have that in the computer?” An accurate medication reconciliation relies on diligence from patients and all of their providers; however, diligence alone is not sufficient.

Scope of the Problem

In 2005, research indicated that 54% of patients being admitted to the hospital, and 14% of patients being discharged, had a discrepancy in their medication lists.^{1,2} Such discrepancies can result in poor medication adherence and in preventable adverse drug events (ADEs). The Joint Commission listed medication reconciliation as a National Patient Safety Goal in 2005 and began scoring it in accreditation. In 2009, CMS enacted Meaningful Use, which includes medication reconciliation as a core objective for both inpatient and outpatient settings. The growth of electronic health records (EHRs) and prescribing systems has led to over half of new and renewed prescriptions being sent to pharmacies electronically.³ As with so much that ails healthcare, the hope and expectation was that technology and incentives would improve medication reconciliation and reduce ADEs.

Yet, 10 years later, our efforts have produced little change. Although studies in this area are typically small and single-site, most are discouraging. In a 2015 study of emergency departments, only 21.9% of medication lists matched what the patient took at home,⁴ and in a 2014 study of primary care clinics, only 15% matched.⁵ Another study looking at hospital discharges found that 81% of adults 65 years or older either were subject to a provider error in their medication list or were unaware of at least 1 medication change having taken place.⁶

The problem is inherently hard, and the failure to solve it is multifactorial. On the patient side, individuals have differing abilities to learn and stay on top of what medications they take, and how this list changes; this is a particularly difficult task for the 20% of adults 65 years or older who take more than 10 medications.⁷ In addition, patients may never pick up their medications, may pick them up from different pharmacies, and may take them inconsistently or not at all. On the provider side, it is cumbersome to check long medication lists at each encounter, particularly if there are more pressing matters to address. Doses are important, and high-risk medications (eg, anticoagulants, insulins, diuretics, and antihypertensives) often need frequent dose adjustments.

Moreover, providers may be unclear on who is “in charge” of a medication—for example, the cardiologist or the primary care provider—leading to inconsistent dose changes. Finally, EHRs of different health systems rarely interact, meaning that any patient seen at more than 1 health system will have at least 2 separate medication lists, which, at best, will have a time lag to mutually update, and, at worst, discrepancies leading to preventable ADEs. Therein lies the key to why interventions have not worked: medication reconciliation within a single system misses the point. Any effort with a chance at accuracy must take place at a higher level, including all systems, pharmacies, and providers that a patient encounters. For this reason, we call for a statewide medication reconciliation program (SMRP).

A Potential Solution

The ideal SMRP should have features as follows. It should be a single source—a “master list”—used by all prescribers, existing beyond a single health system, such that all health systems, prescribers, and pharmacies for the state should be enrolled. It should be electronic, with real-time updating of changes to the list, as well as what the patient has picked up. The list would have both current medications and a history of what a patient had received in the past, including at what sites, and providers would be able to make annotations. The SMRP would be organized in a way that users find intuitive and easy to use, hopefully avoiding the “600 clicks” that

many EHRs require of providers.⁸ Individual health systems' EHRs would be interoperable with the SMRP, avoiding double work for the provider. Additionally, a patient portal would allow patients to not only to see their current medication list, but to potentially be an active collaborator in keeping it up-to-date. All of this should be managed by a multidisciplinary board, including providers and pharmacists.

The concept does have a precedent. Every state, except Missouri, has a Prescription Drug Monitoring Program (PDMP), which is a statewide database tracking narcotic prescriptions. The goal of PDMPs is to clamp down on "pill mills" and "doctor shopping" for opiates; however, they can also serve as a tool for providers in deciding whether to prescribe opiates for a patient. To work successfully, PDMPs require comprehensive registration of providers and pharmacies, as well as the maintenance of an electronic system that is separate from the EHR system and must serve different users in different settings while maintaining patient privacy. They have also taken various forms throughout the states, with different successes, problems, and failures.⁹ As such, PDMPs can provide experimental evidence for how best to organize an SMRP.

Barriers and Limitations

The SMRP presents barriers and limitations regarding politics and privacy. In terms of politics, making a usable SMRP would involve coordinating many parties with diverse interests, which might require significant money and incentives. Health systems may view it to their disadvantage to make their EHRs interoperable with an SMRP. Providers may balk at registering for the SMRP and at using more than a single system for their daily work, and pharmacies, too, may balk at registering—particularly as this would represent a burden for pharmacies that do not already use e-prescribing systems. If it has been difficult to get universal buy-in for PDMPs, it will be more difficult for the SMRP.

In terms of privacy, the problem is 2-fold. First, any EHR is vulnerable to cyber-attack, and an SMRP connected to many individual health systems would need appropriate encryption and security to avoid data breaches. Second, our current culture of patient privacy allows for data sharing within a health system, but not beyond; the sharing of information in an SMRP would need to hew to privacy laws. It is important to note, however, that data privacy is not a concern that is exclusive to healthcare, nor is the current system without problems.

Conclusions

Learning what medications a patient has been prescribed and is actually taking is an inefficient, difficult, and absolutely vital task, and our patients bear the consequences of inaccuracies. Neverthe-

TAKE-AWAY POINTS

A statewide program that collects and reports what medications individuals have been prescribed and picked up from the pharmacy has the potential to save many lives through reductions in medication errors.

- ▶ Studies demonstrate that electronic health record medication lists often contain errors or omissions.
- ▶ Medication reconciliation—verifying the list of medications that a patient takes—is difficult, and increasingly so, due to multiple factors.
- ▶ The success of prescription drug monitoring programs at reducing erroneous opiate prescriptions offers hope that such a program would work for all medications.

less, despite the barriers, we believe the dangers and limitations of the current system make establishing an SMRP not only desirable, but necessary. Increasingly, the advancement of healthcare quality and safety requires coordination and interoperability to address systemic problems. The EHR has been an effective tool, although not a panacea, for what is actually required is a re-envisioning of medication reconciliation. PDMPs show us that registry and formation of a database is realizable. Now is the right time for action.

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