

Patient Safety Tip of the Week

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Errors in Pre-Populated Medication Lists

When we did our first electronic medical record implementation over 10 years ago we were excited. We thought we'd have the medication reconciliation problem solved. We had vendors lined up who had medication fill data from the insurers and third party pharmaceutical middlemen to add to data from our own hospital and clinic records. We thought all that data would give us not only accurate current medication lists but also tell us a lot about patient compliance/adherence with their medications. Boy, were we wrong!

We found there were significant gaps in the data. Drugs provided as free samples in physicians' offices were not on the list and any drug a patient might have paid for out-of-pocket was not on the list. Drugs provided as part of clinical trials were not included. And OTC drugs, including important ones like aspirin, were not on the lists. Moreover, we often saw drugs on the lists that our patients were not taking. Drugs that had been discontinued since last dispensed remained on the list (see our March 2017 What's New in the Patient Safety World column "[Yes! Another Voice for Medication e-Discontinuation!](#)" regarding the need for an electronic way to discontinue medications). In some cases there were simply errors in the data. We even occasionally saw instances where a patient was getting a drug that was actually intended for their (uninsured) family member or friend.

We also saw cases where doses of medications were erroneous. For example, some patients were utilizing pill-splitting so they were really only taking half the dose that appeared on the pre-populated forms. In other cases, the dose had been adjusted since the last dispensed amount appearing on the forms.

So there were several dangers in using such pre-populated lists. An important medication might be omitted when a patient was admitted to a hospital. Or a medication that had been discontinued or never intended to be used might be inadvertently started on admission to a hospital. In other cases, incorrect doses were given.

Now, a formal study on the errors on such pre-populated medication lists expands upon our experience. Canadian researchers ([Stockton 2017](#)) analyzed data on hospitalized patients where the "best possible medication history" lists were pre-populated with data from a Canadian medication dispensing system and records of drug dispensing from other outpatient dispensing facilities. They found that 47% of the 151 patients in their study were exposed to medication errors on admission. Of 112 medication errors identified, 85

(75.9%) were categorized as unexplained medication discrepancies. The majority of these were inappropriate discontinuations (38%) and omissions (28%). But they also found 24% were errors of “commission”, including 10 cases of continuation of medications that were contraindicated and 17 cases where previously discontinued medications were reordered. 15% of the medication discrepancies were deemed to have the potential to cause moderate harm and 1 case had the potential to cause serious harm. Errors of commission were especially likely to potentially cause harm. Analyzing multiple variables they found taking 8 or more medications and presence of cognitive impairment were factors associated with unexplained medication discrepancies.

The authors felt that there may be an overreliance on dispensing data by prescribers, leading to less rigorous attempts to take careful medication histories and otherwise verify the lists. They also note that it is quite easy to click boxes on the prepopulated forms.

Obviously, we are not surprised at the findings in the Stockton study. It clearly points out the pre-populating medication lists is fraught with dangers. That doesn't mean pre-population should never be used. But it emphasizes the need for careful verification, using multiple sources, of any and all medications during medication reconciliation.

Also, that one unexpected issue we encountered (medications intended for someone other than the patient) puts the physician in a very uncomfortable position of wanting to help his/her patient but having uncovered an instance of healthcare fraud.

References:

Stockton KR, Wickham ME, Lai S, et al. Incidence of clinically relevant medication errors in the era of electronically prepopulated medication reconciliation forms: a retrospective chart review. *CMAJ Open* 2017; 5(2): E345-E353 May 5, 2017
<http://cmajopen.ca/content/5/2/E345.full>



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