Patient Safety Tip of the Week

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A Gap in ePrescribing:

Stopping Medications

A recent case report in the Medical Journal of Australia (Tong 2014) brought to light a substantial gap in our current systems for e-prescribing. The authors describe a case where an 82 y.o. man on warfarin for atrial fibrillation develops bruising with a severely prolonged INR after cessation of rifampicin, which he had been taking for treatment of tuberculosis. The patient had previously been on warfarin 4 mg. daily and that dose had been increased to 12 mg. daily in conjunction with monitoring of INR levels while the patient was on the anti-TB regimen. The warfarin therapy was managed by his PCP, while the antimicrobial therapy was managed by a specialist. The rifampicin had been discontinued by the specialist 7 weeks before the hospital admission for the bruising. It was concluded that there had been a significant drug-drug interaction between the warfarin and rifampicin and that the cessation of rifampicin therapy had led to the prolonged INR when the warfarin dose was not readjusted.

The case, of course, raises multiple issues. The most obvious would be a problem in communication between the physicians managing the various medications. This might be an endorsement for our frequent use of "coumadin clinics" where a nurse or pharmacist in conjunction with a supervising physician regularly review all the patient's medications and adjust warfarin dosage based on expected interactions and INR results.

But it also illustrates some of the issues we have with our IT systems. Even though most regions are developing HIE's or RHIO's that integrate health information from multiple sources, those resources are often not routinely accessed by physicians and may not yet be intergrated into the EMR's and e-prescribing systems in physician offices.

But, importantly, this case illustrates another critical issue: stopping a medication is much different than starting one. The clinical decision support built into our EMR's and e-prescribing systems generally is pretty good at identifying potentially serious drug-drug interactions and generating alerts at the time a medication is prescribed. That presumes

the alerts are turned on and the "severity" threshold for the particular alert is enabled. (To avoid alert fatigue we usually recommend that only the more serious alerts are enabled.)

But stopping a medication is much different. Most systems are not programmed to generate any alerts at the time you discontinue a medication. Hence, even if your system would have generated a drug-drug interaction alert when you first prescribed a medication, it would not likely generate an alert later when you discontinue that medication. Moreover, starting a medication requires an active process – you either write a prescription, enter one into a computer, or call the pharmacy. Whereas discontinuing a medication is often more passive – you may just tell the patient over the phone to stop it when the patient calls about a potential side effect. You don't call the pharmacy to stop it. And, if there was no associated office visit, you might forget to update the patient's medication list in your EMR (or paper records) until the patient's next office visit.

Another problem is that a patient may continue to get medications that you thought you had stopped. A study done in a large multispecialty group practice in Massachusetts (Allen 2012) showed that among targeted medications that were electronically discontinued (on the practice's EMR) 1.5% were subsequently dispensed by a pharmacy at least once. And this was just at the practice's internal pharmacy. How often this happened at community pharmacies was not known. Moreover, when they did manual chart reviews of selected high-risk medications that had been discontinued they found that 12% of cases were associated with potential harm.

The authors note that when a physician discontinues a medication on an EMR he/she often (erroneously) assumes that such information is being transmitted to the pharmacy. Such is seldom the case with today's EMR systems. Further, many pharmacies today have sophisticated systems that let you know, as a patient, that you have a refill waiting for you at the pharmacy. Patients may erroneously presume that their physician restarted that medication.

These examples highlight the continuing struggles we have in optimizing medication reconciliation. The need to do medication reconciliation at every office (or hospital) visit is obvious.

While we need to rely on technology vendors and HIE/RHIO's to come up with some better electronic and interoperability solutions, you also need to look at your own practice. How do you update your patients' medication lists after you do that over-the-phone medication discontinuation? How do you let the pharmacy know you have stopped a medication? How do you find out if your patient is still being dispensed a discontinued medication? How do you find out that another physician has discontinued a medication on one of your patients? And how do you recognize that the medication you've discontinued may have had a drug-drug interaction with another medication (the dose of which you may now need to adjust)?

Lots of questions. No easy answers.

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