Special nurse-pharmacist teams might dramatically reduce conflicts in patient medication lists

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(Medical Xpress) -- A study of more than 500 patients admitted to, and discharged from, a big-city medical center suggests that nurse-pharmacist teams trained to track down discrepancies between lists of drugs patients are taking at home and those they are scheduled to take in the hospital might substantially reduce such potentially harmful conflicts.

The Johns Hopkins researchers say their program could make patients safer while also saving money by reducing potential complications and readmissions. Their findings, they say, lend support to the idea of relieving physicians of the job of "reconciling" medication lists. Instead, they recommend that nurses and consulting pharmacists make sure the list of drugs ordered on admission to and discharge from the hospital matches what each patient was originally taking at home. This reduces both the risk of adverse drug interactions and the chance that vital medications for chronic diseases are forgotten.

In a report published in the most recent issue of the *Journal of Hospital Medicine*, the researchers say their study showed that unintentional discrepancies between lists of drugs that patients said they were taking when admitted, drugs they actually got during a hospital stay, and medicines they should be taking on discharge, occur in 40 percent of cases.

And while fewer medication errors occurred at discharge — suggesting discharge reconciliation efforts are more effective — four out of five of those discrepancies were much more likely to cause patient harm, the report said. Each additional medication a patient took increased by nearly 9 percent the odds that there would be a medication discrepancy at some point in the admission-to-discharge process.

“When we give dedicated time for teams of nurses and consulting pharmacists to find and fix discrepancies, patients will be safer and hospitals will be delighted that patients are being readmitted less often in a day and age when readmission is a bad word,” says study leader Leonard S. Feldman, M.D., an assistant professor in the Division of General Internal Medicine at the Johns Hopkins University School of Medicine. “It’s just the right thing to do.”

With the increase in chronic conditions, Feldman says the number of medications, both prescription and over-the-counter, that patients are already on when they arrive at the hospital is ballooning. But when they are admitted, patients aren’t always able to remember the names and doses of the drugs they have been taking. It is crucial for doctors and nurses to know which medications a patient is on, either to make sure the patient stays on those drugs, to make sure they come off them if they need to during their treatments or to make sure there will be no adverse drug interactions if new medications are added to their regimens. Similarly, when patients are ready to go home, drug regimens need to be reconciled again, based on the treatment they received and ongoing treatment needs.

In the rush of a hospital admission, especially, Feldman says, patients can’t always remember everything they take — or may just remember the color and shape of the pill, not its name, dose or what condition the drug is for. Sometimes the physician will call a primary-care doctor or a pharmacist looking for more information, but he or she often doesn’t

have the time, he says. Errors during the taking of medication history — whether of omission or commission — are extremely common and clinically important, he adds.

“Many of our patients have limited literacy skills and we expect them to handle three, four or a dozen medications,” Feldman says. “So it’s not hard to imagine that getting accurate medication histories requires some detective work on our part.”

Nurses and pharmacists given the job to do that detective work should not only prevent errors and potentially save lives, but also save money and reduce complications and readmissions, Feldman says.

For the study, physicians took a medication history for each of 563 patients, asking them for a home medication list, or HML. This would typically form the basis for what each patient would continue to receive while in the hospital.

In the next part of the study, a nurse interviewed each of these same patients and compiled a separate list. If a patient could not recall medications or specific regimens, the nurse would review the electronic medical record to see if the patient had a list of medications from a previous hospital discharge. If necessary, the nurse also called the patient’s family, primary care physician and pharmacist for more information. Then the patient was asked to verify the new HML.

The nurses then compared the HML to admission medication orders, creating a list of discrepancies and determining which ones were inadvertent. If the nurse had questions about whether a discrepancy was intended — for example, if a doctor substituted one medication for another upon admission — a pharmacist was consulted. If the nurse found what appeared to be an unintentional discrepancy, the physician was notified and had the opportunity to correct the mistake before it

became a problem. Upon discharge, the nurse compared the HML to the discharge orders, again reconciling any discrepancies and bringing potential errors to the physician's attention.

Of the 563 hospital patients studied between January 2008 and March 2009, 225 had at least one unintended discrepancy. While there were more unintended discrepancies on admission, 55 percent of those discrepancies rated a 1 on a potential harm scale, meaning they were unlikely to cause any harm or discomfort. But the unintended discrepancies upon discharge were potentially more harmful, with 85 percent of them rating 2 or 3 on the scale, meaning a risk of moderate to severe harm.

Among the many problems that can arise if medications are inadvertently omitted during a hospital stay are adverse effects such as withdrawal from statins, anti-depressants and blood pressure drugs. And there can be long-term problems if someone is taken off an important osteoporosis medication, aspirin or other drugs for chronic diseases.

Feldman says the detective work averaged out to roughly $32 per patient, and about $114 to find one discrepancy that could cause harm. If each harmful event costs a hospital roughly $9,300 to treat, then preventing one discrepancy in every 290 patient encounters would offset the intervention costs. The Hopkins group believes that they might be able to prevent over 80 adverse events for every 290 patients admitted, an intervention that would easily pay for itself and help many people.

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