Medication Reconciliation:

An Important New Patient-Safety Priority

By Gina Rogers and Leslie Kirle, MPH

THE CONCEPT OF RECONCILING MEDICATIONS AS A KEY PATIENT-SAFETY priority has been receiving a lot of publicity lately. JCAHO has included reconciling in its annual National Patient Safety Goals, making it a mandate for all hospitals seeking accreditation, and the Institute for Healthcare Improvement (IHI) has embedded the process as one of the cornerstones of its "100,000 Lives" campaign.

What is medication reconciliation?

Medication reconciliation is a formal process for creating the most complete and accurate list possible of all home medications for each hospitalized patient, and then comparing the physician's admission, transfer, and/or discharge orders against that list. Discrepancies are brought to the attention of the physician, and if appropriate, changes are made to the orders. Any resulting changes to orders are documented.

Medication errors that can be prevented by adopting the process include inadvertent omission of needed home medications, failure to restart home medications following transfer and discharge, duplicate therapy at discharge (the result of brand/generic combinations or formulary substitutions), as well as errors associated with incorrect doses or dosage forms.

Why do we need it?

Medication reconciliation sounds like standard operating procedure. Isn't it part of everyone's standard admission procedures to take the medication history? However, as the number of medications being prescribed has grown exponentially, patients are being admitted while on a significant number of different medications, often prescribed by several different doctors and filled at different pharmacies. This has greatly complicated the process of accurately completing a home-medication list and ensuring that those medications are being given during the hospitalization, unless they are contraindicated.

Medication errors are one of the leading causes of injury to hospital patients, with studies showing that approximately two out of every 100 patients admitted to the hospital experience a preventable adverse drug event (ADE). Reconciling emerged as a key safety strategy based on hospital chart reviews that showed that over half of all hospital medication errors occurred at patient-transition points. Variances between the medications patients were taking prior to admission and their admission orders have been shown to range from 30 to 70% in a recently published literature review. Patients' post-discharge vulnerability is highlighted by data indicating that over 12% of patients experience an ADE within two weeks of discharge.

Pharmacists need to identify workflow issues connected with medication reconciliation to ensure that inaccurate medication orders do not reach patients.

How do we reconcile medications?

The reconciling process has three steps.

1. Create the most complete and accurate list possible of all home medications for each patient.
2. Reference that list when writing medication orders.
3. Compare the list against the physician's admission, transfer, and/or discharge orders, and bring any discrepancies to the attention of the physician, and if appropriate, make changes to the orders.

Recommended practices for reconciling medications are as follows:

- Assign responsibility for each step in the process
- Identify time frames for completing the reconciliation
- Partner with patients
- Adopt a standardized form
- Specify infrastructure needs

Hospitals have struggled to determine the best way to integrate reconciling safety practices into their existing workflows. Many tips for getting started, as well as sample reconciling forms, are provided at the Massachusetts Coalition for the Prevention of Medication Errors website (www.macoalition.org). Experience from the 50 Massachusetts hospitals working to implement the safety practices over the last 18 months highlighted the following important ingredients to ensure implementation success:

Leadership support: Strong support from the highest levels of your administration, along with their willingness to remove barriers such as lengthy committee reviews and a willingness to support cooperative work across disciplines and units, are key. Leadership can demonstrate this type of support by using techniques such as sending a letter to the clinical staff about the importance of this effort, having regular meetings with the reconciliation team to identify barriers to progress, taking responsibility for trouble-shooting to remove any barriers, and providing visibility and acknowledgment for the team's work.

Strategic quality goals: Make medication reconciliation a strategic quality goal for the organization and integrate the effort into the hospital's quality improvement process. This can help provide the discipline for internal data collection and reporting, and the sustained focus necessary to maintain gains achieved in the reconciling process.

Multidisciplinary teams: Obtain strong representation from the leadership of the three key stakeholder groups—physicians, nursing, and pharmacy.

Measure: Use data and examples of errors to motivate change and to measure whether changes are leading to improvement. Without ongoing measurement, maintaining the reconciling process over time has proved particularly challenging. Baseline data can also help demonstrate the rationale for doing this work and generate buy-in and clinical support.

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Start small: Stay focused, and use small tests of the reconciling process to identify what strategies work best for your organization.

Embed reconciling into your existing workflow: Make reconciling a standard part of your admission process for every patient.

Don't let perfection be the enemy of the good: Some implementation teams grind to a halt over the first step of the reconciling process—getting the home medication list. They become frustrated that there is no way to ensure a perfectly accurate medication list for each patient. As a result, they never get to the reconciling step. Aim for the most complete and accurate home medication list possible, and always reconcile that list against the admission/transfer/discharge orders.

Pharmacy's Role

Pharmacy's role varies significantly in different hospital implementations, and often depends on factors like staffing shortages and whether the pharmacy provides 24-hour service. But clearly, pharmacists must play important roles and have defined responsibilities on the medication reconciliation implementation team.

Hospitals have developed a range of strategies for involving pharmacists in the medication reconciliation process. Several articles have detailed the benefits of pharmacy taking the intake medication history, noting the improved accuracy of those medication histories and the cost-effectiveness of hiring new pharmacy technicians to help with the process, with the cost offset by reductions in ADEs. Other hospitals assign nurses to the task of taking the home-medication history, but ask pharmacy to take the lead in specific circumstances, such as when admitting:

- patients on more than 10 medications
- patients on specific high-risk meds like chemotherapy drugs or coumadin
- patients being transferred out of the ICU
- patients with a special sensitivity relative to dosing, such as pediatric or renal-failure patients.

Pharmacy has been charged with following up on incomplete medication histories, contacting retail pharmacies or the patient's primary-care physician for clarifications, and sorting through medications brought in by the patient. Some hospitals enlist pharmacy to do the reconciling, comparing the home med list to the actual admit orders and resolving discrepancies. Once the home medication history is completed, nursing faxes the reconciliation form to pharmacy, and pharmacy compares the admit orders to the home history before filling the orders.

Some hospitals in the Massachusetts Coalition's Reconciling Medications Collaborative have argued that only nurses should have the primary reconciliation responsibilities, as nurses have access to the doctor at the bedside to resolve variances. Others feel very strongly that the only way to prevent unreconciled orders from getting filled is to leave control with pharmacy. Several hospitals have assigned primary responsibility to nursing for some units, but have identified pharmacy as the lead in others, like telemetry or the ICU. Hospitals need to carefully assess their current processes for writing and filling new medication orders at admission before determining which department should have primary reconciliation responsibilities. Hospitals that create a sense of shared responsibility with defined medication-reconciliation roles and responsibilities across their care teams will develop the most accurate home medication list possible for each patient.

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Pharmacy and the Medication Reconciliation Implementation Team

Active representation of pharmacy, along with leadership from nursing and physician champions, is a fundamental ingredient to successfully implementing the reconciling medications safety practices. Pharmacists need to identify workflow issues connected with medication reconciliation to ensure that inaccurate medication orders do not reach patients. Pharmacists can also support chart reviews for the collection of baseline and ongoing data, and through their inclusion in ADE-monitoring and -prevention strategies, P&T committee reviews, and other safety efforts, can help promote the visibility of the medication reconciliation effort.

Patient Communication

Engaging patients in their care is crucial to preventing medication errors. Health-care providers need to make sure patients understand the purpose of their medications, how often to take them, and danger signals to watch for. Pharmacists can play a key role in educating patients, cutting through the medical jargon patients often hear from physicians and simplifying complicated prescription instructions for them, thereby effectively supporting the reconciliation process. Educating patients and actively engaging them in dialogue can go a long way toward preventing discharge errors, such as failure to restart needed pre-admission medications or the inadvertent doubling-up of medications. Finding opportunities to encourage patients and their families to know and even bring their medications to the hospital in a brown bag on admission or at discharge can aid in making sure that patients are on the right medications at the right times. P&P

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