reconciliation was not performed, Forster and others2 found that In one Canadian teaching hospital, where formal medication moderate to severe patient discomfort or clinical deterioration. and 38.6% of the discrepancies had the potential to cause medicine ward had an unintentional medication discrepancy, time of admission, 53.6% of 151 patients admitted to a general pharmacy must return to its raison d'être—pharmaceutical care.3

THE "PRO" SIDE

Prioritization of medication reconciliation as a critical activity is definitely the best use of pharmacists' time. We make this argument acknowledging that prioritization is required, as there are many valuable, essential, and important activities to which pharmacists can devote their time. Moreover, medication reconciliation admittedly has some limitations. It is time-consuming, and hospitals often have inadequate resources to be able to provide this service to all patients who need it. It can be a rather tedious activity, and measurement of its effectiveness can be difficult. Still, we are confident in offering the following 5 reasons to support our position.

First, in recent years, evidence has emerged both in Canada and beyond of a critical need to prevent clinically significant patient harm and to address unmet patient needs at transition points. Cornish and others' demonstrated that, at the time of admission, 53.6% of 151 patients admitted to a general medicine ward had an unintentional medication discrepancy, and 38.6% of the discrepancies had the potential to cause moderate to severe patient discomfort or clinical deterioration. In one Canadian teaching hospital, where formal medication reconciliation was not performed, Forster and others' found that 23% of 328 discharged patients had an adverse event, 72% of which were adverse drug events. As pharmacists, we should be concerned about what these studies and others reveal about the communication of medication information at transition points and the implications for patient safety.

Second, in prioritizing all of our activities, the profession of pharmacy must return to its raison d'être—pharmaceutical care.5 Despite appearances, this point does not run counter to our position. Medication reconciliation and pharmaceutical care are not separate and distinct patient care activities; rather, they overlap and intersect. Ong and others' reported that when patients were assessed with a pharmaceutical care process on admission, 65% of the drug-related problems that were identified were linked to the transfer of medication information. Rather than replacing a holistic pharmaceutical care assessment, medication reconciliation is an integral component of such assessments. A basic foundational element allowing pharmacists to effectively provide pharmaceutical care is effective medication reconciliation. As Hepler has highlighted,6 “Seamless care is an essential part of any health care system. Likewise, seamless pharmaceutical care is an essential dimension of any medications management system.” As such, a pharmacist cannot perform or provide pharmaceutical care on hospital admission without a complete record of the patient's current medications (obtained through medication reconciliation).

Similarly, are we really taking responsibility for patient outcomes (per pharmaceutical care) if we do not ensure that medication reconciliation also happens upon discharge? In this regard, the identification of discrepancies and the reconciliation process are necessary components of a comprehensive patient discharge care plan that includes follow-up issues for community clinicians. Also, it should not be overlooked that in performing medication reconciliation on admission, pharmacists are initiating and establishing a relationship with the patient that paves the way for more advanced pharmaceutical care assessment.

Third, pharmacists have unique skills and training, distinct from those of other health care professionals, which enable us to take a leadership role on medication reconciliation. Optimal medication reconciliation requires qualified assessment to elevate the quality of the activity from a clerical to a clinical assessment task. In a recent Canadian randomized controlled trial (published in 2007) involving 464 surgical patients,6 pharmacist-led medication reconciliation in a preadmission clinic resulted in a 50% reduction in the number of patients with discrepancies linked to home medications. Furthermore, the intervention more than halved the number of patients who had discrepancies with the potential to cause possible or probable harm compared with the standard of care (29.9% and 12.9%, respectively). It should be noted that practice models in which pharmacists collaboratively partner with nurses, physicians, technicians, and/or pharmacy students, rather than acting alone, are consistent with, not opposed to, this leadership role.

Fourth, evidence has recently emerged that medication reconciliation can improve patient outcomes dramatically. In an observational study of almost 3 million patients in 885 US hospitals, Bond and Raehl7 demonstrated that the taking of admission drug histories by pharmacists was 1 of 7 clinical pharmacy services associated with a reduction in mortality rate. In fact, the authors highlighted that the reduction in number of deaths per hospital was almost twice that of any other clinical pharmacy service investigated. Furthermore, in a recent systematic review, Kaboli and others8 concluded that pharmacists “reconciling medications” was 1 of only 5 interventions by clinical pharmacists that improved outcomes for hospital patients. This evidence of the benefit of medication reconciliation to patient outcomes creates a strong basis for arguing that it should be a high-priority activity for pharmacists.

Finally, pharmacists’ involvement with medication reconciliation affords us a unique opportunity. Nationally, the Canadian Council on Health Services Accreditation has made medication reconciliation a mandatory requirement, and Safer Healthcare Now!, a national patient safety campaign, has proposed medication reconciliation as one of a handful of core patient safety strategies. In North America, both the CSHP 2015
Medication reconciliation as defined by the Safer Healthcare Now! campaign involves obtaining a complete and accurate list of each patient's current home medications, including name, dosage, frequency, and route. Although few would dispute that medication reconciliation to achieve a reduction in medication errors is important, simply matching lists and even detecting discrepancies will not lead to a reduction in inappropriate medication use, any more than rearranging the chairs on the Titanic would have kept the ship afloat. As such, medication reconciliation should not be a prioritized service for pharmacists. To mandate or even philosophically embrace such an approach within a pharmacy department or association denies the reality that providing good patient care requires contact with patients, time, effort, skill, decision-making, and commitment.

The literature about prioritized clinical services cites medication reconciliation only infrequently. Most of these studies identify surrogate outcomes such as discrepancies and not more clinically relevant outcomes such as morbidity. Conversely, the impact of pharmacist-initiated medication histories or other programs on morbidity is profound. In fact, those medication reconciliation trials that have demonstrated benefit probably involved medication history-taking masquerading as medication reconciliation. The terminology here is critical, and no definition of medication reconciliation mentions appropriateness of therapy. So, while a medication history encompasses medication reconciliation, the converse is not true.

There is little doubt that determining appropriateness is more complex than simply ensuring the accuracy of the list. Is appropriateness an issue? We would argue "yes". For example, it has been suggested that up to 70% of proton pump inhibitor use is inappropriate. Two examples of inappropriate use, among many, include the prescription of atypical antipsychotics for elderly nursing home patients and the use of anticholinergic therapies to manage side effects in patients with dementia who are taking cholinesterase inhibitors. In fact, a recent analysis found that 1 out of every 3 admissions to an internal medicine service at the London Health Science Centre was associated with drug use.

As such, we suggest that the appropriate use of medications is a very real issue. Simply matching lists of medications to ensure continuity will only serve to ensure that inappropriate and potentially harmful therapy persists.

In the real world, medication reconciliation at all 3 critical phases (admission, transfer, and discharge) in a 700-bed facility is estimated to require 9 full-time equivalent positions (unpublished data on file). Unfortunately, funding for

**References**


Medication reconciliation is currently very limited, and matching lists requires fewer resources than would determining appropriateness. Without funding, those services, including medication histories and patient care rounds, that positively affect patient care may be abandoned in favour of providing medication reconciliation.

Is there a risk to the profession if it embraces medication reconciliation as a prioritized service? We have observed pharmacists reconciling medications that were unimportant in terms of the patient’s problems while neglecting clinically significant medication-related issues, yet still feeling that they had done their job. We believe that medication reconciliation could indeed lead to this degree of professional complacency. It is also disturbing that pharmacists continue to look for tasks to perform rather than applying judgement and knowledge by providing care. We all need to realize that tasks like creating lists can be automated with technology, whereas care cannot.

The likelihood that medication reconciliation will be performed increases if it also becomes the mandate of the interdisciplinary team, which includes nursing and medicine as well as pharmacy. Appropriate technologies should be used and expanded to collect the information required for medication reconciliation. In this context, what specific role should pharmacy play? In some facilities, pharmacy technicians perform medication reconciliation, thereby allowing pharmacists to focus on direct patient care. This seems a logical approach and should continue.11 In institutions where pharmacists take medication histories, medication reconciliation is, by default, occurring, and this too should continue. However, asking pharmacists who currently provide direct patient care to create a medication list as an outcome in itself is regressive.

Although pharmacy is perhaps the profession most passionately concerned about medication errors, it is important to realize that even if we prevented every possible medication error, we would only reduce total drug-related mortality by approximately 10%.12 Further reduction of adverse medication-related outcomes requires that pharmacists provide pharmaceutical care, including a medication history that assesses appropriateness. Pharmacists should strive to meet these patient needs by providing the best possible services. While medication reconciliation promises much, given the current health care environment and logistic constraints, it is bound to come up short on the delivery. Let’s hope that the current obsession for matching lists doesn’t deflect us from our ultimate goal of providing pharmaceutical care and determining the most appropriate therapy to provide.

References

Alan Mills, PharmD
Pharmacy
Trillium Health Centre
Mississauga, Ontario

Charles D Bayliff, PharmD
Pharmacy
London Health Science Centre
London, Ontario