Resolving Medication Reconciliation

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Intrinsic to the medication reconciliation process are three steps: (1) verification or gathering the best possible medication history, (2) clarification or ensuring the appropriateness of the medication and dosage regimen, and (3) resolution or resolving discrepancies.[1] While the purpose of reconciliation is to avoid medication errors, the ultimate goals are to improve patient safety and reduce clinical complications associated with medication errors. So important is medication reconciliation that the World Health Organization developed a standard implementation protocol to aid in its application.[1]

In this issue are two intriguing studies that highlight the importance of medication reconciliation but also generate questions.[2,3] In one of these studies, Sanh and others[2] investigated elderly patients with high health care utilization at two academic hospitals and found that potentially inappropriate prescribing occurred in 89% of patients, with both potentially inappropriate medications and potential prescribing omissions being common. The therapeutic classes of medications most often implicated included anticoagulants and antiplatelet agents, renin-angiotensin-aldosterone system (RAAS) inhibitors, benzodiazepines, and opioids. Of note, only 14% of the cases of potentially inappropriate prescribing had been addressed by the time of hospital discharge. The other study was conducted by Abu Hammour and others.[3] After initial screening for unintentional medication discrepancies, 123 surgical patients were randomly assigned to receive medication reconciliation or standard care. Although the number of discrepancies per patient tended to be higher at baseline in the medication reconciliation group, the reduction in discrepancies at discharge was similar between groups. Of clinical importance is that a total of 46 discrepancies were potentially moderately to severely harmful.

Medication reconciliation is resource intensive and often complicated by workflow challenges and system complexities. The results of these two studies highlight that potentially inappropriate prescribing is common among hospitalized patients and that pharmacists are ideally situated to identify such problems. These data are consistent with most other studies.[4] What might surprise readers is the lack of resolution of discrepancies in the two highlighted studies, especially considering that the implicated therapeutic classes were high-risk medications or represented potentially harmful outcomes. In general, however, the literature lacks information about beneficial safety and clinical outcomes associated with medication reconciliation.[4] As a result, practitioners face the challenge of determining whether medication reconciliation is cost effective.

Inconsistent approaches to resolution may explain the lack of demonstrable clinical benefit with medication reconciliation. A recent randomized, multicentre investigation of 1499 patients showed that medication reconciliation by a pharmacist, combined with motivational interviewing and long-term provider interactions, reduced readmission rates at 30 and 180 days, whereas basic medication review had no impact.[5] Similarly, in a systematic review of 17 studies, medication reconciliation that included telephone follow-up or home visits and patient counselling reduced emergency visits and hospital readmissions.[6] In other words, medication reconciliation improved outcomes only when a process for resolution was evident. The obvious critique of these data is the intensive services that were needed to optimize resolution. However, the results suggest that identifying best practices for the process of resolution is imperative if the goals of medication reconciliation are to improve safety and clinical outcomes. Pharmacists are integral to medication reconciliation, and evidence supports their involvement in the steps of verification and clarification. What is needed now is additional investigation about the optimal role of the pharmacist in the resolution step.

References

1. *The High 5s Project standard operating protocol. Assuring medication accuracy at transitions of care: medication reconciliation*. World Health Organization; [cited 2022 Apr 1]. Available from: https://cdn.who.int/media/docs/default-source/integrated-health-services-(ihs)/psf/high5s/h5s-sop.pdf?sfvrsn=e3e53c9_4&ua=1
2. Sanh M, Holbrook A, Macdonald PDM, Lee J. Potentially inappropriate prescribing in hospitalized older adult high-cost health care users: a pilot study. *Can J Hosp Pharm.* 2022;75(3):219-24.
3. Abu Hammour K, Abu Farha R, Ya'acoub R, Salman Z, Basheti I. Impact of pharmacist-directed medication reconciliation in reducing medication discrepancies: a randomized controlled trial. *Can J Hosp Pharm.* 2022;75(3):169-77.
4. Redmond P, Grimes TC, McDonnell R, Boland F, Hughes C, Fahey T. Impact of medication reconciliation for improving transitions of care. *Cochrane Database Syst Rev.* 2018;23:CD010791.
5. Ravn-Nielsen LV, Duckert ML, Lund ML, Henriksen JP, Nielsen ML,

Eriksen CS, et al. Effect of an in-hospital multifaceted clinical pharmacist intervention on the risk of readmission: a randomized clinical trial. *JAMA Intern Med.* 2018;178(3):375-82.

6. Mekonnen AB, McLachlan AJ, Brien JA. Effectiveness of pharmacist-led medication reconciliation programmes on clinical outcomes at hospital transitions: a systematic review and meta-analysis. *BMJ Open.* 2016;6:e010003.

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ON THE FRONT COVER

Hoodoos, Drumheller, Alberta

This photograph was taken by Scot Simpson during a family trip to Drumheller, Alberta. He and his family enjoyed seeing dinosaurs at the Royal Tyrrell Museum, a tipple at the Atlas Coal Mine, and these hoodoos. Scot captured this image using a Nikon D3200 Digital SLR with 18–55 mm lens set to ISO 100, 1/640 exposure, f/3.8.

Scot is a professor in the Faculty of Pharmacy and Pharmaceutical Sciences at the University of Alberta. He is a pharmacoepidemiologist and health services researcher with an interest in diabetes management. When not working, he can be found out on the Edmonton River valley trails with his dog or on his mountain bike.

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