Evidence-Based Pharmacy Practice?

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Since its introduction, evidence-based medicine (EBM) has become a cornerstone of medical, pharmacy, nursing, and other health discipline education and daily clinical practice. Pharmacy curricula contain many EBM courses, as well as courses in critical appraisal and statistics, and EBM is also applied throughout pharmacotherapy courses and experiential rotations (in the form of journal clubs and case presentations). Intuitively, we might assume that the same is happening within pharmacy practice, whereby only those activities with supporting evidence are being performed by pharmacists and pharmacy technicians, especially in the current environment of limited resources. Unfortunately, we don't have to look far to see examples where that assumption could be challenged, such as the case of medication reconciliation. Medication reconciliation has been touted as an important patient safety initiative by leading safety organizations, such as the Institute for Safe Medication Practices Canada (ISMP Canada) and Accreditation Canada.[1,2] In fact, by 2020, Accreditation Canada expects that medication reconciliation will be performed and documented for all inpatients at all points of transition, and that it will also be completed and documented for selected subgroups of ambulatory care patients or non-admitted patients in the emergency department.[3]

In this issue of the *Canadian Journal of Hospital Pharmacy* (*CJHP*), the study by Duffet and colleagues[4] and the Point Counterpoint articles[5,6] focus on stress ulcer prophylaxis in the intensive care unit (ICU), a topic that has been well researched through rigorous trials and is well accepted as a practice standard in most ICUs. Yet scientists such as Deborah Cook, a coauthor on the Duffet study who has published many of the landmark papers on this topic, are continuing to evaluate the more recently published evidence to further define the risk versus benefits of this inexpensive yet not totally benign therapy. However, the evidence supporting comprehensive medication reconciliation, a task to which many pharmacists, technicians, other health discipline practitioners, and administrators have devoted countless hours, is very weak relative to the quantity of resources dedicated to it. In 2 recent meta-analyses, pharmacist-led medication reconciliation programs were shown to reduce medication discrepancies, but with variable to no benefits in terms of clinically significant discrepancies.[7,8] Furthermore, these studies showed no effect on more concrete outcomes, such as mortality, readmission rates, and harm from medications (or from omission of medications). In fact, the intervention arm of many of the randomized controlled trials in the 2016 meta-analyses[7,8] included a "bundle" of pharmacist functions, only one of which was medication reconciliation. For example, in the often-quoted study by Gillespie and others,[9] the intervention included medication counselling, medication review during the inpatient admission, and postdischarge follow-up by telephone. It might be argued that ensuring the patient is on the right drug for the right indication via medication review is more important and more likely to have led to the positive outcomes than simply ensuring that home medications are assessed for continuation during transfers of care. In other words, if there is no valid indication, then reconciling and continuing a medication without critical evaluation could actually be harmful to the patient! Finally, in the latest version of the electronic medication reconciliation toolkit published by ISMP Canada, there is no mention of medication reconciliation and its benefit in terms of these "hard" outcomes.[2]

Obviously, there is an important role for medication reconciliation, but science has not yet determined many key aspects, including for whom, by whom, when, and how it should be carried out in order to achieve the greatest cost-effectiveness. These are the same aspects that we question for any other

medication therapy that is based on the principles of EBM. For many patients needing a large number of medications, such as those with chronic kidney disease or those who have undergone organ transplant, conducting a best possible medication history and verifying medication therapy using a second source, as suggested by ISMP Canada as best practice,[10] requires a significant amount of time. And that's only step 1 of the medication reconciliation process! To carry out this time-intensive task effectively for every patient at every transfer point is inconsistent with the currently available evidence. In contrast, there *is* evidence to support 7 other clinical activities that are associated with reduced mortality rates, yet these other activities are not universally performed by all pharmacists for all eligible patients.[11] From an evidence-based perspective, this discordance seems difficult to justify.

It is not my intention here to advocate abandoning medication reconciliation, as I do believe it has a role when applied appropriately; rather, please consider this as a plea to generate more evidence to better define where and how medication reconciliation should fit in the armamentarium of the pharmacist's tool box. Indeed, the study by MacDonald and others[12] in this issue of *CJHP*, which attempts to investigate how best to obtain a best possible medication history for non-admitted patients in a busy emergency department, will add to that body of much-needed literature. Only when we approach our practice and adoption of standards with the same rigour as we apply in EBM can we truly say that we practise using an evidence-based approach!

References

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ON THE FRONT COVER

Cadboro Bay, Victoria, British Columbia

CSHP member Sean Spina took this issue's cover photograph during an after-dinner family walk to Cadboro-Gyro Park in Cadboro Bay, British Columbia. Ever-changing marine traffic on the beautiful blue Pacific Ocean, against the backdrop of snow-capped mountains, is reason enough for Sean to never leave home without his camera. It is commonplace for Sean to see sailboats, kayaks, canoes, and marine wildlife in the waters surrounding Vancouver Island. Sean is the Clinical Coordinator of Pharmacy Services at the Royal Jubilee Hospital in Victoria, British Columbia.

The *CJHP* would be pleased to consider photographs featuring Canadian scenery taken by CSHP members for use on the front cover of the Journal. If you would like to submit a photograph, please send an electronic copy (minimum resolution 300 dpi) to publications@cshp.ca.