



## Rethinking the way we manage medications

### *Using pharmacists in community family practice*

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We have a confession to make: we hate managing medication lists. You know the lists we are talking about: a patient with type 2 diabetes arrives late on a Friday afternoon needing an oral hypoglycemic and bedtime insulin; an angiotensin-converting enzyme inhibitor for renal protection; the acetylsalicylic acid,  $\beta$ -blocker, nitrate, and statin-fibrate combination postmyocardial infarction; a tricyclic antidepressant for peripheral neuropathy; and finally, a selective serotonin reuptake inhibitor when he or she becomes overwhelmed with taking all these pills.

Actually it is not the clinical application of medications that we hate. It can be rewarding to revamp a list of 10 medications. What we really hate is the ongoing administrative and monitoring time that goes with these long medication lists. Do our patients benefit when we spend more time on their medication lists than on their health concerns? Have the realities of modern therapeutics detracted from listening, diagnosing, and developing comprehensive management plans that often incorporate pharmaceuticals but are not constantly dominated by them?

#### **Managing medications is going to get easier, right?**

Do not count on it. A random survey of Ontario physicians' drug knowledge discovered that 63% were satisfied with their knowledge of drug effectiveness, 41% were satisfied with their knowledge of the use of specific categories of drugs, and only 15% were satisfied with their knowledge of drug costs.<sup>1</sup> Is drug knowledge really going to get better when you consider the complexity of modern therapeutics and the lack of emphasis on pharmacology in medical school curriculums?

Drug therapy is an integral and evolving part of modern medicine. New medications are entering the market at an astounding rate, and the cost of medications continues to threaten to bankrupt both patients and the health care system. Our aging patients have become more medically complex, and guidelines

continue to recommend more aggressive medical therapy. As more patients take more drugs, we must increasingly cope with adverse drug reactions and drug interactions, events that result in 3% to 30% of emergency department visits.<sup>2,3</sup>

Developing computerized medical records might offer some relief. They have the potential to provide more seamless care by linking community physicians with community pharmacists. Once a patient's medication list is entered into a database, it could be linked to pharmacies, a drug interaction program, and a series of other resources. Although not without risks, computerization would certainly save the time of writing renewal prescriptions and possibly prevent transcription errors.

Computerized medical records also provide opportunities to collaborate with pharmacists in managing medications. If we do not collaborate to share some of the administrative and management load, computerized medical records might add another time-consuming wrinkle into the medication list game. The increasing complexity of patients' medication lists, combined with the shortage of family doctors in Canada, suggests the need for innovative changes that better use pharmacists within the health care system.<sup>4,5</sup>

Hand-held computers (eg, Palm Pilots) are another resource for helping physicians manage medications. These devices are extremely useful, and many physicians are now using them. There are shortcomings: some software fails to mention less common side effects or poorly documented drug interactions and disease-drug, food-drug, or natural product-drug interactions. The recent release of ePocrates Rx Pro 6.0 is a notable exception without these shortcomings, but it has others: it comes with a cost to users, excludes several drugs approved for the Canadian market, uses American versus Canadian names, and is useful only on selected hand-held devices. RxFiles charts for the Palm, a Canadian drug database, is another evolving free software option currently available on the Web at [www.RxFiles.ca](http://www.RxFiles.ca).

### Role for clinic pharmacists

Given that more than 15% of the Canadian health care budget is spent on drugs, second only to hospital costs (physician services comes in third), pharmacists have an important role in health care delivery.<sup>6</sup> In Canada, pharmacists already effectively assist teams of physicians in selecting and managing medications in hospitals and even in a few family practices.<sup>7-9</sup>

Pharmacists are specifically trained in all aspects of pharmaceutical care. Their role is defined by Hepler and Strand<sup>10</sup> as “the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve patient’s quality of life.” Pharmacists’ training includes pharmacology, drug-delivery systems, pharmacokinetics, pharmacotherapeutics, evidence-based medicine, and pharmacoconomics. As drug experts, pharmacists are equipped with skills to prevent, identify, and resolve drug-related problems; recommend cost-effective therapy; and counsel patients on drug therapy. Some pharmacists have additional training through residencies; Doctor of Pharmacy degrees; and fellowships, which provide enhanced clinical skills in interpretation of clinical significance and application of evidence, collaboration with physicians, evaluation of laboratory investigations, and experience working in health care teams.

If pharmacists assist in managing medications, some family physicians might fear that they will lose their therapeutic skills and continuity of care with their patients. In hospitals, pharmacists have integrated well with physician-led health care teams. Physicians must still know about medications, but they would have assistance with the selection, monitoring, and cost of medications. Pharmacists are not trained to diagnose nor do they want to be viewed as experts in diagnosis. Pharmacists’ role and expertise, given diagnoses by physicians, is to ensure drug therapy is appropriate, effective, and rational. Patient outcomes are given highest priority.

The United Kingdom has been incorporating pharmacists into general practice for years. It is now common to see pharmacists in primary care settings in Britain. In a cost comparison study,<sup>11</sup> savings secondary to pharmacists’ drug interventions were double that of the cost of employing the pharmacists. In terms of outcomes, pharmacists in general practice have been shown to identify and improve compliance, simplify medication regimens, decrease adverse effects, and effectively control and monitor repeat prescriptions.<sup>12-17</sup>

In a US study, Johnson and Bootman<sup>18</sup> demonstrated that pharmacists could decrease drug-related morbidity and mortality that led to approximately 28.2% of admissions to hospital. They also estimated

that \$76.6 billion (US) could be saved in ambulatory care settings through pharmacists’ care.<sup>19</sup> Likewise, a 1993 Canadian study<sup>20</sup> estimated that approximately \$268 million to \$389 million was saved in health care costs secondary to community pharmacists’ interventions; this figure does not include savings associated with hospitalization, emergency room visits, or direct and indirect costs to patients or employers.

A randomized trial in Canada, the Seniors Medication Assessment Research Trial (SMART), recently evaluated the role of pharmacists in family practice.<sup>21</sup> Pharmacists identified an average of three drug-related problems per patient, and physicians intended to implement their recommendations 84% of the time. Both pharmacists and family physicians reported the experience as positive and a good opportunity for learning.<sup>22,23</sup>

With increasing emphasis on medical management and more therapeutic agents available, the pharmacy world has acknowledged that pharmacists need more education and training to meet the demands of their changing roles. In the United States, all pharmacy programs have recently converted to Doctor of Pharmacy (Pharm D) programs.<sup>24</sup> The goal is to train pharmacists to make appropriate drug choices, collaborate with other health professionals, and share responsibility for outcomes related to drug therapy. The debate is ongoing, and a few universities in Canada are actively considering this change.

Pharmacists have been shown to improve patient outcomes in many settings. They have effectively filled roles in managing hypertension, hyperlipidemia, asthma, and heart failure clinics.<sup>25-29</sup> In practical terms, pharmacists could also be used in other ways, including therapeutic consultations, drug information, and patient counseling. **Table 1** lists the potential roles for pharmacists in community practice.

### Redefining roles and responsibilities

Physicians cannot, however, just hand over the responsibilities of managing medication lists to pharmacists. The American College of Physicians and the Society of Internal Medicine have recently published a position paper entitled “Pharmacist Scope of Practice.”<sup>24</sup> In this paper, the authors look at the expanding scope of practice of pharmacists in the United States and support the movement to larger-scale Pharm D training, pharmacists as a source for immunizations, and pharmacist-physician collaborative practice agreements directed by physicians. They oppose, however, pharmacists’ having independent pharmacist prescription privileges.

Health care delivery in Canada, particularly the role of family physicians, is notably different from in

**Table 1. Potential roles for pharmacists in community family practice**

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Keeping medication and allergy profiles updated  
 Recommending dosage, including renal and hepatic dosing  
 Managing and preventing drug interactions  
 Counseling patients on medications  
 Maximizing adherence through scheduling and dosettes  
 Providing seamless care with community pharmacies

- Prescription refills
- Drug coverage and insurance issues

Consulting on drug therapy  
 Educating physicians and patients

- New drugs
- New evidence and therapeutic uses
- Teaching medical students and residents
- Patient education seminars

Monitoring for adverse drug effects (ie, isoniazid, methotrexate)  
 Sharing current drug information  
 Managing diseases through clinics (when given diagnoses from physicians, pharmacists select cost-effective drug therapy, counsel, monitor adverse effects, titrate doses, etc)

- Anticoagulation
- Hyperlipidemia
- Asthma
- Diabetes
- Heart failure
- Hypertension

Doing practice-based research  
 Collaborating on preventive medicine (eg, osteoporosis, heart disease, smoking cessation)

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the United States; however, patients are using both pharmacists and family physicians as community health care resources. Pharmacists and family physicians will need to understand their responsibilities if the two disciplines hope to cooperate more successfully in the future. Improved communication between physicians and pharmacists and the continued development of patient-centred and evidence-based approaches could mean more effective working relationships and ultimately better patient care.

Managing medications is difficult. It is unrealistic to think that one discipline can be the sole provider of drug-related health care and be held accountable for acquiring new and existing drug information. If pharmacists can work effectively within group family practices to reduce costs and iatrogenic harm, improve outcomes, and ease the burden of managing medication lists, then let us start talking. ♦

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*The opinions expressed in editorials are those of the authors and do not imply endorsement by the College of Family Physicians of Canada.*

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