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We undertook the evaluation of the BC Medication Management Project so that medication management programs throughout Canada can benefit from the lessons learned in British Columbia. Ideally, the findings from this evaluation will inform development of new programs and contribute to providing improved pharmaceutical services to patients while meeting the needs of other stakeholders.

Nous avons entrepris l'évaluation du projet de gestion de la pharmacothérapie mis en place en Colombie-Britannique afin de permettre aux autres programmes canadiens de ce genre de profiter des leçons apprises en C.-B. Idéalement, ces résultats pourront guider le développement de nouveaux programmes et contribuer à l'amélioration des services pharmaceutiques offerts aux patients, tout en répondant aux besoins des autres intervenants.

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DOI: 10.1177/1715163515569571

BC Medication Management Project: Perspectives of pharmacists, patients and physicians

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ABSTRACT

Background: The BC Medication Management Project (BCMMP) was developed by the BC Ministry of Health and the BC Pharmacy Association. This pilot project ran from September 2010 to January 2012. Pharmacists reviewed patients' medication histories, discussed best use of medications, provided education and monitored for adverse effects, developed a plan to deal with medication issues and created a best possible medication history.

Methods: To evaluate the experience of participating in the BCMMP, challenges and strengths of the project and the alignment of these experiences with the overarching goals, focus groups and interviews were conducted

with 6 stakeholder groups. Themes were compared within and across stakeholder type and descriptively analyzed.

Results: A total of 88 people participated in the focus groups/interviews. Pharmacists stated that providing BCMMP services was professionally satisfying and concurred with patients that the service did benefit them. However, participating in the BCMMP was not seen as financially sustainable by pharmacy owners, and there were concerns about patient selection. Physicians expressed concerns about increased workload associated with the BCMMP, for which they were not compensated. The computer system and burden of documentation were identified as the greatest problems.

Conclusions: The BCMMP pilot project was enthusiastically received by pharmacists and patients who felt that it benefited patients and moved the pharmacy profession in a positive direction. It was widely felt that the BCMMP could be successful and sustainable if the identified challenges are addressed. *Can Pharm J (Ott)* 2015;148:90-100.

Background

Transforming pharmacists' practice from a role traditionally focused on drug product dispensing ("product focused") towards a role in "patient-focused" health care has been a pre-occupation of the profession over the past few decades.¹ In Canada, pharmacists have obtained the rights to expand their scope of practice in numerous jurisdictions; in British Columbia (BC), pharmacists are currently being reimbursed for providing prescription adaptations

(renewing a prescription; changing the dose, formulation or instructions of a prescription; or therapeutic substitution), immunizations and medication reviews (producing a best possible medication history and identifying and resolving drug therapy problems). However, the current practice environment still does not have the capability of pharmacy access to laboratory values or other electronic medical records. The BC Medication Management Project (BCMMP) was a pilot project of a comprehensive pharmacy

service to further promote the safe and effective use of medications, increase patient ownership of their health and help patients achieve targeted medication therapy outcomes through consultations with a pharmacist. All BC residents taking at least 1 medication were eligible to receive this service. As part of the BCMMP, pharmacists were to review patients' medication history, discuss how best to use their medications, discuss any adverse effects, develop a plan to deal with medication management (MM) issues and create a best possible medication history. The project was targeted towards community-based pharmacies and included 243 pharmacists at 111 pharmacies across BC.² Participating pharmacists were provided online training sessions and were assigned a pharmacy project leader (PPL), who provided mentoring and support; PPLs were selected from the original 30 pharmacists to join the BCMMP. Participating pharmacies were paid a monthly fee of \$650 and between \$60 and \$95 per patient (depending on the complexity of the case), with a maximum of 1 payment per patient every 6 months. Each participating pharmacist was required to meet in person with at least 1 physician to tell them about the project. Pharmacists were also required to enter documentation about each patient encounter into Assurance, the software system used to document patients' encounters and facilitate remuneration within the program. This pilot project ran from September 2010 to January 2012, during which 10,845 patients received MM services in 26,486 instances.²

The objective of this study was to evaluate the perceptions of pharmacists, patients and physicians about the BCMMP.

Methods

Focus groups and interviews were conducted with 6 stakeholder groups, as well as controls (i.e., same stakeholder type but did not participate in the BCMMP) where appropriate. Given that pharmacy owners and pharmacists self-selected to participate in the BCMMP, there may have been a pro-BCMMP bias among these individuals. Consequently, controls were included to ensure that pharmacists and pharmacy owners who may not have supported the BCMMP had an opportunity to express their opinions of the project. Physician controls were included because this provided insight into how the BCMMP is perceived among the majority

KNOWLEDGE INTO PRACTICE

- In Canada, few qualitative evaluations have been conducted to determine the perspectives of key stakeholder groups in pharmacist-provided medication management for patients. Our study provides insight into the experiences of patients, pharmacists and physicians.
- Patients most valued the education received as part of medication management provided by pharmacists, as afterwards they felt less confused about their medications, more informed and reassured about the correct use of medications.
- Pharmacists can increase efficiency of providing medication management to those patients who may need it most by screening for individuals with multiple disease states, taking multiple medications, those with adherence issues or identifiable symptoms related to their medications.
- Pharmacists and physicians may achieve the optimal outcome by collaborating to provide medication management, for example, by setting up a referral system and sharing patient information.

of physicians in the province who did not have any firsthand experience with the project yet who could have patients receiving these services in the future, be asked to refer patients and be expected to collaborate with pharmacists around these services. A description of each stakeholder group and recruitment methods are provided in Appendix 1.

1. BCMMP and control pharmacists
2. BCMMP and control pharmacy owners
3. Pharmacy project leaders
4. Pharmacy leaders (i.e., pharmacists in professional associations, government and academia regarded as key opinion leaders)
5. BCMMP patients (younger and older than 65 years)
6. BCMMP and control physicians

Note that *participating pharmacists* is used throughout to refer collectively to BCMMP pharmacists and PPLs.

Discussions were led by an experienced qualitative researcher. The semistructured discussions addressed how different stakeholders experienced benefits or drawbacks as a consequence of participating in the project, training, competency/qualification of pharmacists to provide MM, collaboration and communication with physicians, impact on workload, and resources available for participating (a sample focus group guide is provided in Appendix 2). Interviews

TABLE 1 Number of individuals who participated in the evaluation

	Focus groups	Interviews	Total
BCMMP participants			
Pharmacists	12	6	18
Pharmacy owners	6	1	7
Pharmacy project leaders	6	1	7
Pharmacy leaders	7	4	11
Physicians (general practitioners)	13	2	15
Patients younger than 65 y	0	6	6
Patients older than 65 y	4	4	8
Controls			
Pharmacists	5	0	5
Pharmacy owners	0	4	4
Physicians (general practitioners)	7	0	7
Total			88

TABLE 2 Evaluation patients' demographics

Characteristic	Value
Age, y	
Average age	62
Minimum age	26
Maximum age	89
Sex, n	
Male	6
Female	7
Ethnicity, n	
Caucasian/white	12
Other	1
Highest level of education, n	
Elementary school	0
High school or equivalent	5
Vocational/technical school	2
Some college/university	2
Undergraduate college/university degree	1
Graduate or professional degree	2
Other	1
Income level, n	
Under \$10,000	1

(continued)

were conducted by telephone, and focus groups were conducted in person. Discussions were audio-recorded and transcribed. Codes were developed to categorize responses around common themes/issues. The theme codes (overarching issues) were created based on the interview/focus group questions, and the subtheme codes (specific points that fit within an overarching theme) were created from the content of the discussions. Three assistants coded the transcripts in QSR Nvivo 9, and all coding was reviewed by a senior researcher (NH). Themes were compared within and across stakeholder type and descriptively analyzed.

All participants were offered financial compensation for their participation in the evaluation (1 participant refused to accept financial compensation; all other participants were paid for their participation). Ethics approval was received from the University of British Columbia's Behavioural Research Ethics Board.

Results

Eighty-eight people, of 391 invited, participated in the focus groups and interviews (Table 1; see additional detail in Appendix 1). Detailed demographic information about participants is provided in Tables 2 and 3. An overview of stakeholder perspectives on different aspects of

the BCMMP is described below. Quotes are verbatim except where modifications were needed to provide context or clarity; these changes are indicated with []. There were no substantive differences in comments made by participants versus controls on any of the themes described below; consequently, the results do not differentiate responses along this dimension.

Benefits of the BCMMP

Benefits to patients: Participants from all stakeholder groups saw patients as being more informed about their medications as a consequence of receiving MM. Pharmacists described identifying patients during their MM interview who did not know that they were supposed to continue using their medications, were taking too many medications or had been taking incorrect doses:

The patient on insulin who's escalated by one unit per day from 10 to 11 to 21 to 31 to 41. When I called her, I wondered why she was passing out all day long with hypoglycemia. So instead of going 10, 11, 12, increasing the dose, she was increasing by 10 units. Because she thought that's what the doctor said. And when I walked her to the doctor's office, you know, and sat her down the physician just shook his head. (BCMMP pharmacist)

I had a patient who, it was time for their 6-month review, and I really didn't think that I was going to find anything. So we started going through all the medications, and it turns out one of the medications came from the renal clinic. We didn't dispense it. So when I came to that one, I asked, "Are you still taking it?" And he says, "No." And when I asked why, he didn't realize he had to order it. So he had been without it. (BCMMP pharmacist)

Patients reported feeling less confused about their medications after speaking with the pharmacist and stated that they were using their medications more correctly as a consequence of receiving MM:

Like, I'm on some puffers and I guess I was taking them wrong, so I quit taking them. And he asked me to come into the pharmacy and I went in there and he explained what I

TABLE 2 (continued)

Characteristic	Value
\$10,000 to \$29,999	0
\$30,000 to \$49,999	6
\$50,000 to \$99,999	2
\$100,000 to \$150,000	0
Over \$150,000	0
Prefer not to answer	4
Disease state (patient could select multiple conditions), <i>n</i>	
Respiratory	6
Musculoskeletal	5
Behavioural/mood	3
Gastrointestinal	7
Liver	2
Cardiovascular	5
Visual	2
Renal/kidney	1
Endocrine	5
Neurological	0
Learning difficulties	0
Hearing problems	2
Immunological	1
Other	1
Number of prescription medications	
≤3	6
4 to 6	4
7 to 9	0
10 or more	3
Number of nonprescription medications	
≤3	10
4 to 6	3
7 to 9	0
10 or more	0
Patient has regular contact with pharmacist, <i>n</i>	
Yes	13
No	0
Frequency of contact with pharmacist, <i>n</i>	
More than once per month	2
Once per month	3
Every 2 to 5 months	6
Every 6 to 12 months	1
Less than once per year	1

TABLE 3 Evaluation pharmacists' and general practitioners' demographics

	Pharmacists	General practitioner
Age, y		
Average	43	50
Minimum	26	35
Maximum	62	64
Sex, n		
Male	17	16
Female	12	8
No response	3	0
Years in practice		
Average	19	21
Minimum	4	9
Maximum	39	37

was doing wrong and how I should be doing it and it made all the difference. (Patient older than 65 years)

Pharmacists (BCMMP and PPLs) and patients perceived that patients also benefited from having a holistic review of their medications. These stakeholders felt that during visits to physicians, only the medications relevant to the medical issue being addressed at that visit were reviewed by the physician and that an integrative review of the patients' medication profile was lacking. This was especially relevant when the patient was receiving prescriptions from multiple physicians:

Our patients have medication from 3, 4 different sources. They had it from HIV doctors, they had it from the psych doctors, specialists and they have the family doctor, and although we had a very good group of doctors looking into everything, they had 3, 4 different sources of medication. The GP [general practitioner] didn't have the time to look into all of them. (BCMMP pharmacist)

Pharmacists and patients described patients benefiting from recommendations about how to use their medications to increase effectiveness and/or reduce side effects (e.g., time of day, with food). Patients also liked that the pharmacists reviewed

their over-the-counter (OTC) medications, which are not typically reviewed by physicians.

Patients and pharmacists felt that MM strengthened their relationship. A pharmacist explained that when patients are comfortable talking to their pharmacist, they are more likely to raise issues or ask questions about general health issues.

Benefits to pharmacists: Pharmacists and pharmacy owners perceived that pharmacists felt more professionally fulfilled from providing MM by using their knowledge and training in a way that was intellectually challenging and provided financial compensation that reflected the service they provided.

Benefits to pharmacies: Pharmacy owners and pharmacy leaders identified pharmacies as benefiting from increased patient loyalty as a consequence of patients receiving a valued service from, and forming relationships with, their pharmacist. This would financially benefit the pharmacies because patients would continue to fill prescriptions at the pharmacy but also because the patients would likely make additional purchases while in the store.

Some pharmacies benefited financially directly from the remuneration for providing MM, and the remuneration for MM was seen by some to compensate for time that is spent discussing nonprescription medications with patients (for which there is no dispensing

or professional fee). For example, a pharmacy with a large HIV patient base spent significant amounts of unremunerated time recommending and advising on the use of dimenhydrinate and loperamide for coping with adverse effects; with the BCMMP, these discussions took place during an MM session for which there was professional remuneration.

Benefits to physicians: Pharmacists and pharmacy owners explained that physicians' receipt of information about the medications used by their patients, including information on OTC medications and interactions, benefited the physicians because it gave them information that could be used in managing their patients' health. This was perceived as particularly useful when pharmacists provided MM to patients before their first visit to a new physician so the physician had access to the medication information at the initial patient encounter. Physicians agreed that it was beneficial to receive information from the pharmacist, particularly patients' updated medication lists. Physicians also felt that MM is an important service that should be provided by the physicians; however, since they do not always have time to fulfill this service, it is good that the pharmacists can provide it instead.

Drawbacks of the BCMMP

Drawbacks for patients: Pharmacists were concerned that patients might not benefit from receiving MM because they lacked medication issues sufficiently complex to warrant the time and depth of discussion required of this service (which relates to the challenge of recruiting appropriate patients and the amount of information that pharmacists were required to gather on each patient). While the services were not seen as harmful, they could be a waste of pharmacists' and patients' time.

Pharmacists, pharmacy leaders and GPs were concerned that patient-physician relationships might be jeopardized if the patient lost trust in his or her physician because the pharmacist made recommendations that differed from the physician, if the patient felt that the physician was not meeting his or her needs if the pharmacists' recommendations were rejected, or if the physician resented the patient for getting advice from the pharmacist.

To a lesser extent, pharmacists and physicians thought that patients might have increased confusion about their medications if they were given

different information by the pharmacist than they received from their physician or if they were given too much information.

Patients did not identify any drawbacks to receiving MM.

Drawbacks for pharmacists: Pharmacists and pharmacy owners were most concerned about the time it took to provide MM because of the intensive documentation required for each patient; this made providing the service highly challenging both in terms of the time taken away from filling prescriptions and the rate of compensation. BCMMP pharmacists and GPs also felt that a significant drawback to pharmacists providing this service was the lack of patient information available to pharmacists. There was much concern about how informed recommendations could be made without laboratory test results, information about the patients' diagnosis and targets and medication history, since patients were not seen as a reliable source of this information.

Because one thing that I found is, especially with the elderly population . . . —say they have congestive heart failure. That person might just say, “I have high blood pressure.” A lot of times they don't know the exact disease state. . . . Or, you know, I would suggest this medication. But what you don't know is the patient has been coming to your pharmacy for 2 years. You can only see recent medication or what's on the PharmaNet. But maybe this patient has tried all the other medications in the book. This is the only one that she tolerates well and does a decent job of controlling her problem. (BCMMP pharmacist)

Drawbacks for pharmacies: Pharmacy owners, pharmacy leaders and PPLs did not think that providing the service was financially feasible or sustainable because the remuneration either did not cover the pharmacists' time providing the service (largely because of the demands of documentation) or because remuneration only covered the pharmacists' time but did not generate any additional revenue.

Drawbacks for physicians: Physicians were primarily concerned about the impact on their time and their lack of compensation for their time. Physicians described their uncompensated time for reviewing and responding to faxes from

MISE EN PRATIQUE DES CONNAISSANCES

- Au Canada, peu d'évaluations qualitatives ont été réalisées afin de connaître la perception des principaux groupes d'intervenants concernés par les programmes de gestion de la pharmacothérapie offerts en pharmacie. Notre étude offre un aperçu de l'expérience des patients, des pharmaciens et des médecins.
- Pour les patients, le plus appréciable était l'éducation fournie par le pharmacien dans le cadre de la gestion des médicaments; ils se sentaient moins confus à propos de leurs médicaments, plus informés et rassurés sur leur bon usage.
- Les pharmaciens peuvent améliorer l'efficacité de leur programme de gestion de la pharmacothérapie en ciblant les patients les plus susceptibles d'en bénéficier, comme les personnes souffrant de plusieurs maladies, celles qui prennent plusieurs médicaments, celles qui ont des problèmes d'adhésion à leur pharmacothérapie ou qui présentent des symptômes potentiellement liés à leur traitement.
- Les pharmaciens et les médecins peuvent obtenir de meilleurs résultats en collaborant dans le cadre de la gestion des médicaments, par exemple en mettant au point un système de référence et en partageant certains renseignements sur les patients.

the pharmacists and the demands of dealing with issues uncovered by the pharmacist that the physician did not deem important. An undercurrent across physicians was that the BCMMP was insulting to physicians because it implied that pharmacists could better manage their patients' medications with limited patient information and time together than the physician who has an ongoing and in-depth relationship with the patient. Physicians felt that pharmacists were being valued more than physicians, as reflected by the remuneration model for MM, which exceeded the current remuneration for a physician patient visit.

Selection and recruitment of patients

Challenges associated with patient selection arose from the high degree of discretion left to pharmacists around the patients to whom services should be offered, because pharmacists found it difficult to determine which patients would benefit most from services prior to interviewing them. Some pharmacists targeted patients with multiple disease states or taking multiple medications, while other pharmacists tried to focus on patients with adherence issues or identifiable symptoms related to their medications. Others said they recruited anyone who was interested in receiving the service or anyone with whom they already had a

relationship. Some pharmacies felt they needed to cast a wide net because interest in the project was low. Most physicians wanted the service to be by referral only.

Computer system (Assurance)

Pharmacists, PPLs, pharmacy owners and pharmacy leaders were displeased with the computer system (Assurance) used for documenting BCMMP activities. The system was not integrated into existing pharmacy databases and consequently created significant inefficiencies by requiring double-entry of data. Participants consistently described the Assurance system as a barrier to doing documentation and low recruiters* cited the system as a key reason for their low recruitment:

So it got to be, like, okay, I'm more than happy to be with the patients and work with the patients, but the documentation and getting the system connected to Assurance and having the uploads and all that, it just didn't work. And I ended up having to reenter my patients, my reports, 4 times. So by the fifth time, can you do it one more time? I said, "No, I can't." You know, what, now you're asking me to spend—I've now spent an hour on the patient, another 15 minutes follow-up with them at least and then I've done at least 4 hours' worth of computer time for one patient. I'm, like, this is just not—I'm not doing it again. (BCMMP pharmacist)

Pharmacists reported that there were times that they provided MM but did not document the activity because it took too long. There were also complaints about the completeness of the databases within Assurance; for example, pharmacists reported the formulary was missing medications:

In the early days what happened with Assurance was that nothing was in there. The drugs were not in there. There was a very minimal number of drugs, and then the sigs [label directions] were not in there, the doctors were not in there. So they were

*Low-recruiting BCMMP pharmacists are those in the bottom one-third of pharmacists with respect to the number of patients recruited.

literally relying on us to enter every single field. (BCMMP PPL)

The list that shows up, mostly for the generic part, there were the generic medications that are dispensed in the US, not in Canada. (BCMMP pharmacist)

Overall, Assurance was a source of substantial frustration for participants and, if left unchanged, would be a barrier to future participation.

Receptiveness of physicians

Generally, pharmacists, owners and pharmacy leaders felt that physicians were more receptive to the project when the service was provided by a pharmacist with whom they already had a relationship:

Again in our area, our doctors know us quite well, you know, and mostly on a first-name basis, so they do take your opinions seriously and they respect them. (BCMMP pharmacist)

Pharmacists and owners felt that many physicians had a negative attitude about the BCMMP. Pharmacists perceived physicians as not seeing a need for the service and feeling defensive and adversarial towards the pharmacists, a perception that was consistent with the views expressed by the physicians:

The doctor didn't really see the point. She felt that what this program was intended to do, they were already doing. It was duplication of services, and in this time of fiscal restraint, she just didn't think that this was going to be a beneficial program. (BCMMP pharmacist)

The pharmacists perceived the physicians as feeling criticized when the pharmacist made suggestions for modifying prescriptions and territorial (as if the pharmacists were infringing on the physicians' territory by participating in clinical decision making). Consequently, pharmacists described the need to approach physicians carefully and to word communications such that the recommendations would not be seen as criticisms.

Contributing to the poor reception by physicians was the common perception that the skills of community pharmacists are highly variable and that many are unqualified to provide the service:

Obviously there are very, very capable, knowledgeable pharmacists whom I call when I have a question about, like, which of the 2 agents is more available, cheaper, more suitable, less side effects. But I mean, I don't know if all my patients go to pharmacists who are trustworthy like that. (Physician)

But I have to say I don't trust my local community—I've not met a really good community pharmacist. I've met really good clinical pharmacologists [PharmDs], so they have to have much of a higher level of training than the ones that I've encountered. (Physician)

A minority of physicians perceived community pharmacists as trustworthy and highly skilled, and they felt comfortable with them providing the service to their patients.

I think [pharmacists] do have the skills, and I think patients trust their pharmacists . . . I think they have the expertise. (Physician)

Pharmacists and pharmacy owners characterized more of their physician interactions as negatively received than positively received, and most GPs viewed the BCMMP unfavourably in its current form, although many would embrace the service with modifications, such as making it referral based. Many favoured having the service provided by pharmacists but housed in doctors' offices or clinics.

Fee structure

Pharmacists, owners and pharmacy leaders who viewed the fee structure favourably agreed that the amount being paid to pharmacists for providing MM would be fine if there was less documentation. The primary complaint about the fee structure was that it was too low given the amount of time that pharmacists were spending per patient, including the documentation. Because such a long time was spent per patient, pharmacy owners reported losing money by participating in the BCMMP.

Physicians generally thought the fee paid to pharmacists in the BCMMP was too high, citing that pharmacists were paid more for an MM session than the GPs were paid for a patient visit. Many also felt that the dispensing should already include some MM, and consequently pharmacists

were being paid twice for providing the same service. A common comment by GPs was that they should be paid a fee for reviewing the documents sent to them by the pharmacists and following up with patient concerns that arise in response to discussions with their pharmacists.

Most patients felt that the remuneration to pharmacists seemed reasonable, although several suggested that the amount paid should be based on the amount of time spent providing the service.

Discussion

Our study provides qualitative data on patient, pharmacist and physician perspectives for MM. Specifically, patients were very receptive to receiving this service from pharmacists, and many reported significant improvements to their health or important interventions that pharmacists had made in their care. Pharmacists generally supported the provision of this service, citing improvements in patient health and safety through interventions and enhancement of their professional role. Some concerns expressed by pharmacists included the level of remuneration, the amount of documentation involved and the limitations associated with the Assurance computer system. Physicians appeared to be somewhat resistant to pharmacists providing MM and were more supportive if patients were provided service based on a referral mechanism. In addition, physicians wanted to be remunerated to read and respond to queries generated through pharmacist-initiated MM.

Pharmacist scope of practice in Canada is changing at an unprecedented rate. Nearly all provinces and territories have approved legislation and policies that have altered the way in which pharmacy is being practised. MM is at the forefront of these changes, so it is important to understand the perspectives of all the players as this set of activities is being embraced by the profession.

Very few articles have evaluated the impact of MM from the perspectives of the various stakeholders. A Canadian study by Riley³ examined the economic, clinical and patient satisfaction perspectives of providing medication reviews. From a total of 336 patients evaluated, 50 were selected randomly to assess their satisfaction using 5-point Likert scales. Patients were very satisfied (all with a score of 5) with the pharmacist's ideas and suggestions about medication use and the length of time spent with a pharmacist.

Another study from the United States evaluated the perception of patients on MM services.⁴ The authors distributed 250 surveys to patients who attended at least 1 of the 4 community pharmacies that participated in the study. Of the distributed surveys, 81 (32%) were successfully completed. Some of the findings of this survey included that 60% of respondents had not heard of MM services, 80% had not had a medication review, 70% thought that MM services to improve medication use and overall health were important and 50% indicated that they would like to learn more about MM.

A few studies have examined physician perspectives of MM. A Canadian study by Pojskic et al.⁵ examined the identified pros and cons from the physicians' perspectives on collaborating with pharmacists around medication review services. The most important advantage identified by physicians in collaborating with community pharmacists was the generation of an accurate patient medication list. Pharmacists' lack of patient information (results of laboratory tests and diagnoses) was identified as being the most important disadvantage.

Another US study aimed to identify physician perceptions of community pharmacist-provided MM.⁶ The authors used a qualitative approach to assess perceptions. Results of the focus groups included that physicians valued the provision of a complete medication list through MM services but felt that physicians were better MM providers than pharmacists. Other concerns identified were lack of physician reimbursement for pharmacist-initiated MM, the need for familiarity and communication between the physicians and pharmacists and the clinical training of pharmacists.

Previous evaluations of MM services identified similar findings to the ones that we documented. Patients were highly satisfied with MM activities and appreciated the time that pharmacists spent with them. Physicians generally had concerns regarding their remuneration, the remuneration of pharmacists and the nature of the relationship with pharmacists. Interestingly, the definition employed from US-based studies of MM was close to that used in the BCMMP. For example, MM was described as a "comprehensive medication therapy review, personal medication record, medication-related action plan, intervention and/or referral documentation, and

collaboration with the patient's physician to follow up and address all medication-related needs of the patient.”⁷ It is not unexpected that we found similar findings, given the similar model of service provision.

MM services provided by pharmacists in Canada have been defined in various ways. For example, the Blueprint for Pharmacy in Canada 2014 defines MM as “all professional activities that a pharmacist undertakes, as the medication experts, to optimize safe and effective drug therapy outcomes for patients. It includes both prescription adaptation and injection administration.”⁸ This definition is clearly wider than the one employed in the BCMMP and the definition above. As such, it is possible that findings across different types of MM might be different.

There are other limitations to this study. As is consistent with qualitative research and the nonrandom recruitment method, the results are not generalizable. There were no controls for the patients that could either negatively or positively bias the findings because patients who may have been uninterested in participating were not included. The data were collected after the introduction of the medication review program in British Columbia. A basic medication review involves pharmacists meeting with their patient and preparing a best possible medication history, with the purpose of improving the patient's understanding of their medications.⁹ During focus groups, there was some confusion among control pharmacists as to which program was being discussed. To address the latter issue, participants were reminded throughout the focus groups/interviews about which program was being discussed, and participants were corrected if they began speaking about the other program.

The BCMMP pilot project was successful in many ways. Pharmacists were enthusiastic about providing clinical services and felt professionally challenged and satisfied. Patients were very pleased with the services received and felt more knowledgeable about their medications and how to use them effectively. The project faced challenges, the most serious of which pertained to the Assurance system and the heavy burden of documentation that pharmacists found frustrating, time-consuming and a barrier to providing and/or documenting services. For many pharmacies, the BCMMP was not financially sustainable,

BOX 1 Recommendations

Modify the software system: Use a system that is compatible with existing pharmacy databases, is user-friendly and has a complete data set of Canadian drugs.

Simplify documentation: The data documented for each patient should be reduced to the minimum data that are absolutely necessary for ongoing provision of services and monitoring of patient care.

Establish a screening process for patient recruitment: To better identify patients who will benefit from medication management, implement a screening process that would pay pharmacists a minimal fee for a brief conversation with patients to ascertain if a full medication management session would be beneficial.

Promote GP referrals: GPs should be encouraged to refer patients who could most benefit from medication management. This will require outreach to GPs and education about the value for patients in receiving medication management, as well as how the service provided by pharmacists differs from what GPs typically provide during a patient visit.

Provide a fee for GP involvement in the BCMMP: The BCMMP requires collaboration between pharmacists and GPs, and GPs should be financially compensated for the time they spend engaged in BCMMP-related activities.

Build pharmacist-GP relationships: In order for pharmacists and GPs to successfully collaborate, they need to establish relationships built on familiarity and trust. This will require a culture shift in which community pharmacists have a clinical focus that involves sharing useful information with GPs about drugs and prescribing to establish their credibility and provide opportunities for interaction from which relationships can form. This culture already exists in hospital settings, and consideration should be given to how it can be replicated within a community context.

Increase marketing of the BCMMP: Patient and physician awareness of the BCMMP needs to be increased to let people know what it is and, most important, the value added from using the service.

largely as a consequence of the time spent per patient. Other challenges included physicians' cool reception to the project. However, there did seem to be the potential for support and collaboration with physicians if modifications are made to the BCMMP, such as paying physicians for their involvement and promoting physician referrals of patients. The strong sentiments of goodwill about the BCMMP and the interest of pharmacists in providing the service set the stage for a successful program if the needed adjustments are made to resolve the identified challenges. ■

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Author Contributions: All authors contributed to study design, interpreting study results, critical review of the manuscript and approved the final version submitted for publication. N. Henrich led the focus groups/interviews and data analysis and contributed to manuscript drafting and revisions. N. Tsao contributed to focus groups/interviews, data analysis, manuscript drafting and revisions. L. Gastonguay coordinated the focus group/interviews and contributed to manuscript drafting. L. Lynd and C. Marra conceived the study and obtained funding. C. Marra was responsible for posing the research question, research design and methods, research staff supervision and contributed to manuscript writing and revisions.

Declaration of Conflicting Interests: The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding: British Columbia Ministry of Health.

References

1. Cipolle, RJ, Strand, LM, Morley, PC. *Pharmaceutical care practice: the clinician's guide*. 2nd ed. New York: McGraw-Hill; 2004.
2. Davidson K. BCMMP paves the way for the future of pharmacy. *The Tablet* 2012;Feb/Mar:18-21.
3. Riley K. Enhanced medication management in the community: a win-win proposal from an economic, clinical and humanistic perspective. *Can Pharm J (Ott)* 2013;146:162.
4. Truong HA, Layson-Wolf C, Rodriguez de Bittner M, et al. Perceptions of patients on Medicare Part D medication therapy management services. *J Am Pharm Assoc (2003)* 2009;49:392-8.
5. Pojskic N, MacKeigan L, Boon H, et al. Ontario family physician readiness to collaborate with community pharmacists on drug therapy management. *Res Soc Admin Pharmacy* 2011;7:39-50.
6. Harriman S, Snyder ME, Duenas GG, et al. Physician perceptions of pharmacist-provided medication therapy management: qualitative analysis. *J Am Pharm Assoc (2003)* 2010;50:67-71.
7. American Pharmacists Association, National Association of Chain Drug Stores Foundation. Medication therapy management in pharmacy practice: core elements of an MTM service model (version 2.0). *J Am Pharm Assoc (2003)* 2008;48:341-53.
8. Blueprint for Pharmacy. Environmental scan: pharmacy practice legislation and policy changes across Canada, May 2014. Ottawa (ON): Canadian Pharmacists' Association; 2014. Available: <http://blueprintforpharmacy.ca/docs/kt-tools/environmental-scan---pharmacy-practice-legislation-and-policy-changes-may-2014.pdf> (accessed August 11, 2014).
9. BC Pharmacy Association. Medication review services. 2011. Available: www.bcpharmacy.ca/medication-review-service (accessed November 11, 2014).