

## Collaboration between family physicians and community pharmacists to enhance adherence to chronic medications

*Opinions of Saskatchewan family physicians*

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### ABSTRACT

**OBJECTIVE** To ascertain the opinions of family physicians about medication adherence in patients with chronic diseases and the role of community pharmacists in improving adherence to chronic medications, as well as their opinions on increased collaboration with pharmacists to enhance medication adherence.

**DESIGN** A self-administered postal survey of 19 questions, with opinions collected by ordinal (5-point Likert scale) and open responses.

**SETTING** Saskatchewan.

**PARTICIPANTS** Two hundred and eighty-six family physicians working in Saskatchewan in January 2008.

**MAIN OUTCOME MEASURES** Descriptive statistics of physicians' opinions on the following: medication adherence in patients with chronic diseases; their current interaction with community pharmacists; and potential collaborative strategies to promote medication adherence.

**RESULTS** The response rate was 39.4%. Approximately 75% of the physicians acknowledged that nonadherence to chronic medications was a problem among their patients. Medication costs and side effects were identified as the 2 most common reasons for medication nonadherence. Only one-quarter of physicians communicated regularly with community pharmacists about adherence issues; most of these physicians were rural physicians. Most physicians agreed that increased collaboration with pharmacists would improve adherence, although support for potential interactions with pharmacists varied. Concerns were expressed about time required by physicians and financial reimbursement. Physicians in practice for less than 10 years and those practising in rural areas were more willing to share clinical information and communicate with pharmacists to promote medication adherence.

**CONCLUSION** Saskatchewan family physicians appreciate the importance of medication nonadherence but currently seldom interact with community pharmacists on this issue. They believe that pharmacists have a role in supporting patients with medication adherence and indicate a willingness to work more collaboratively with them to promote adherence. For this type of collaboration to be effective, it appears that increased adherence-related communication between the 2 health care providers and additional health care funding are required.

### EDITOR'S KEY POINTS

- The purpose of this study was to obtain family physicians' opinions on medication adherence of patients with chronic diseases. It aimed to determine if physicians and community pharmacists interacted in order to facilitate medication adherence, collecting physicians' opinions as to whether such collaboration might be appropriate.
- Saskatchewan family physicians believed that community pharmacists had a role in supporting patients with medication adherence; however, they seldom communicated with pharmacists about this issue.
- Physicians reported a willingness to work more collaboratively with community pharmacists to promote medication adherence.

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## Collaboration entre les médecins de famille et les pharmaciens communautaires pour accroître la fidélité à l'égard des médicaments utilisés pour le traitement des maladies chroniques

*Opinion des médecins de famille de la Saskatchewan*

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### RÉSUMÉ

**OBJECTIF** Vérifier l'opinion de médecins de famille sur la fidélité des malades chroniques à leur médication, sur le rôle des pharmaciens communautaires dans l'amélioration de la fidélité aux médicaments utilisés pour le traitement des maladies chroniques et sur la possibilité qu'une collaboration accrue avec les pharmaciens puisse favoriser cette fidélité.

**TYPE D'ÉTUDE** Enquête postale auto-administrée comportant 12 questions, les opinions étant recueillies sous forme de réponses ouvertes ou chiffrées (échelle de Likert à 5 points).

**CONTEXTE** Saskatchewan.

**PARTICIPANTS** Un total de 281 médecins de famille exerçant en Saskatchewan en janvier 2008.

**PRINCIPAUX PARAMÈTRES ÉTUDIÉS** Statistiques descriptives de l'opinion des médecins sur la fidélité des malades chroniques à leur médication, sur leur interaction courante avec les pharmaciens communautaires et sur les stratégies de collaboration susceptibles de favoriser la fidélité aux médicaments prescrits.

**RÉSULTATS** Le taux de réponse était de 39,4%. Environ 75% des médecins reconnaissaient que la fidélité aux médicaments utilisés pour le traitement des maladies chroniques était problématique chez leurs patients. Les 2 causes les plus fréquentes de non-fidélité étaient le coût des médicaments et les effets indésirables. Seulement un quart des médecins communiquaient régulièrement avec des pharmaciens communautaires au sujet de problèmes de non-fidélité au traitement. La plupart des médecins estimaient qu'une meilleure collaboration avec les pharmaciens communautaires améliorerait la fidélité, quoique l'appui à l'égard d'éventuelles interactions avec les pharmaciens était variable. Les inquiétudes concernaient le temps exigé des médecins et le remboursement financier. Ceux qui avaient moins de 10 ans de pratique et ceux qui exerçaient en milieu rural étaient plus disposés à partager les informations cliniques et à communiquer avec les pharmaciens pour favoriser la fidélité.

**CONCLUSION** Les médecins de la Saskatchewan sont conscients des problèmes de non-fidélité aux médicaments prescrits, mais en réalité, ils interagissent rarement avec les pharmaciens communautaires à ce sujet. Ils croient que les pharmaciens ont un rôle à jouer pour favoriser la fidélité des patients et se montrent disposés à collaborer davantage avec eux dans ce but. Pour que ce type de collaboration soit efficace, une meilleure communication médecins-pharmaciens et un financement additionnel de la part des services de santé paraîtraient nécessaires.

### POINTS DE REPÈRE DU RÉDACTEUR

- Cette étude voulait connaître l'opinion de médecins de famille sur la fidélité à la médication chez les malades chroniques. Elle cherchait à déterminer si les médecins et les pharmaciens communautaires travaillaient de concert pour favoriser la fidélité au traitement pharmacologique, en demandant aux médecins si ce type de collaboration leur semblait approprié.
- Les médecins de la Saskatchewan estimaient que les pharmaciens communautaires pouvait participer à la promotion de la fidélité des patients à leur médication; toutefois, ils communiquaient rarement avec les pharmaciens à ce sujet.
- Les médecins se disaient prêts à collaborer davantage avec les pharmaciens communautaires pour favoriser la fidélité à la médication.

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The World Health Organization defines *adherence* as “the extent to which a person’s behaviour—taking medication, following a diet, and/or executing lifestyle changes, corresponds with agreed recommendations from a health care provider.”<sup>1</sup> Nonadherence to medications is a considerable barrier to the successful management of chronic diseases, such as diabetes, hypertension, coronary artery disease, osteoporosis, and asthma,<sup>1-5</sup> and is responsible for sub-optimal clinical outcomes, decreased quality of life, and increased expense to the health care system.<sup>1,6-10</sup> Numerous patient-related factors influence medication adherence, including individual patient perceptions and beliefs, knowledge about the disease and role of medications, and the complexity and cost of treatment regimens.<sup>2-5,11,12</sup>

It has been suggested that enhancing medication adherence through cost-effective interventions would likely have a greater effect on the health of patients with chronic diseases than any improvement in specific medical therapies.<sup>1,13</sup> Therefore, health care providers should be encouraged to work collaboratively for the purpose of improving medication adherence.<sup>14</sup> Many studies have demonstrated improved adherence to chronic medications with pharmacist-led interventions<sup>2-4,15-17</sup> or with physicians and pharmacists collaborating in formal teams.<sup>18-20</sup> However, the extent of family physician–community pharmacist collaborations to improve medication adherence in real-world settings is unknown, and there are no published studies looking at the opinions of these health care providers in regard to working together to enhance medication adherence.

The purpose of this study was to obtain the opinions of family physicians or general practitioners regarding medication adherence in patients with chronic diseases. In addition, we aimed to determine if physicians and community pharmacists currently interact to facilitate medication adherence, and to solicit opinions from physicians as to whether such collaboration might be appropriate. This study is part of a research program looking at establishing a novel model of practice to enhance medication adherence in typical community pharmacy settings.

## METHODS

The study was conducted in early 2008, with purposive sampling of all family physicians or general practitioners working in family practice or primary care clinics in the province of Saskatchewan. A current list of names and addresses of family physicians or general practitioners licensed in the province was obtained from the College of Physicians and Surgeons of Saskatchewan. Physicians working primarily in hospital settings (eg, emergency, palliative care, critical care) or administration were

excluded. A questionnaire, with a cover letter and stamped return envelope, was sent to each of the 747 physicians, with a second mailing 6 weeks later to all nonrespondents. The study collection period closed 12 weeks after the initial mailing. A sample size calculation was not required given that the entire physician population was surveyed.

The questionnaire was designed with input from all research team members because an existing survey capturing the 3 study objectives (ie, physician opinions regarding medication adherence, physician opinions regarding the potential role of pharmacists in medication adherence, and the current level of collaboration with community pharmacists regarding medication adherence) could not be found. Demographic information included the type and location of medical practice, number of years in practice, and accessibility of community pharmacies. The questionnaire was revised after pilot-testing by 7 family physicians in the Department of Academic Medicine at the University of Saskatchewan in Saskatoon. The final questionnaire contained 19 questions. Opinions were collected using 5-point Likert scales and open responses. Research ethics board approval was obtained from the University of Saskatchewan.

Descriptive statistics were calculated for all questions. Analysis was carried out using  $\chi^2$  and ANOVA (analysis of variance) tests, as appropriate. All statistical analyses were performed using SPSS, version 15.0 for Windows.

## RESULTS

A total of 747 questionnaires were initially mailed, and 307 questionnaires were returned. Thirteen questionnaires could not be delivered to the intended recipients and 8 physicians stated that the questionnaire was not applicable to them, resulting in 286 of the 726 questionnaires (a response rate of 39.4%) available for analysis. The demographics of the respondents are reported in **Table 1**.

Most physicians either partially (171 of 285 [60.0%]) or strongly (50 of 285 [17.5%]) agreed that nonadherence to chronic medications was a problem for their patients.

Most physicians (247 of 284) either usually (54.6%) or always (32.4%) assessed for adherence in their patients. However, the process used to evaluate adherence was not determined. Physicians were asked to rank from a list the top 5 reasons they believed were responsible for medication nonadherence in their patients. Medication cost was ranked number 1 most often (39.6% of respondents); medication side effects (actual or perceived) was the next most commonly identified reason for nonadherence (**Table 2**).

Almost all respondents (276 of 284 [97.2%]) believed that community pharmacists had a role in promoting

**Table 1. Demographics of respondents: N = 286.\***

DEMOGRAPHICS	N (%)
Location of practice, <sup>†</sup> N = 286	
• Rural (population < 10 000)	86 (30.1)
• Regional (population 10 000–100 000)	54 (18.9)
• Urban (Regina or Saskatoon)	146 (51.0)
Practice type, N = 284	
• Solo	44 (15.5)
• Small group (< 5 physicians)	86 (30.3)
• Large group (≥ 5 physicians)	154 (54.2)
Years in family or general practice, N = 284	
• < 5	41 (14.4)
• 5–10	39 (13.7)
• > 10	204 (71.8)
No. of community pharmacies in practice location, N = 278	
• 1	29 (10.4)
• 2–4	53 (19.1)
• 5–10	39 (14)
• > 10	157 (56.5)

\*Data are missing from some of the 286 surveys.

<sup>†</sup>Classification established by Saskatchewan Health and Saskatchewan Medical Association.

adherence to chronic medications, with more than half (167 of 275 [60.7%]) indicating that pharmacists and physicians should take equal responsibility in addressing this issue. Although most physicians thought that pharmacists had a positive influence on patient adherence to chronic medications (53 of 271 [19.6%] strong positive influence; 148 of 271 [54.6%] somewhat positive influence), 77.4% also believed that the standard prescription medication information handouts often given to patients by pharmacists adversely affected adherence.

Only 25.9% (70 of 270) of physicians stated that they communicated with pharmacists at least weekly regarding medication adherence issues. Most of these respondents (37 of 70 [52.9%]) were from rural practices. Among physicians who practised in urban centres, only 16.9% regularly communicated with pharmacists regarding medication adherence. Furthermore, 40.4% (55 of 136) of urban physicians reported never discussing medication adherence with pharmacists, compared with

**Table 2. Total number of times respondents ranked a reason for patients' nonadherence to medication as a "top 5" reason**

REASONS FOR NONADHERENCE	TOTAL NO. OF TIMES REASON RANKED IN THE "TOP 5" (N = 1416)	% OF ALL RESPONSES
Cost of medication	235	16.6
Medication side effects (actual or perceived)	214	15.1
Patient does not perceive the benefit of the medication	175	12.4
Patient in denial about medical condition or risk	164	11.6
Patient forgetfulness	125	8.8
Complexity of medication regimens	115	8.1
Patient perception that medication is "not natural" or "not safe"	115	8.1
Overemphasis of potential side effects by pharmacists	109	7.7
Lack of education by physicians about the role or purpose of prescribed medication	89	6.3
Lack of regular reinforcement by physicians	45	3.2
Patient inability to read or understand the prescription label	22	1.5
Other	8	0.6

24.7% of rural physicians and 39.6% of physicians in regional centres (population 10 000 to 100 000).

Most respondents agreed that some level of collaboration could be achieved between physicians and community pharmacists for the purpose of improving patient adherence. The extent to which physicians indicated support for activities to promote medication adherence is outlined in **Tables 3** and **4**. Most physicians (96.5%) reported that they would like pharmacists to notify them if a patient was not regularly refilling his or her chronic medications; and 205 of 275 (74.5%) physicians would typically prefer to be contacted by facsimile. Most physicians (82.8%) were supportive of documenting the

**Table 3. Physicians' opinions on whether pharmacist-led activities promote medication adherence in patients with chronic diseases: N = 285.**

PHARMACIST-LED ACTIVITY	PHYSICIANS' OPINIONS, N (%)				
	STRONGLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	STRONGLY DISAGREE
Pharmacist identifies patients who are not refilling prescriptions regularly for chronic medications	205 (71.9)	65 (22.8)	12 (4.2)	2 (0.7)	1 (0.4)
Pharmacist emphasizes medication benefits rather than potential side effects	170 (59.6)	89 (31.2)	17 (6.0)	5 (1.8)	4 (1.4)

**Table 4. Physicians' opinions on whether physician-led activities help to promote medication adherence in patients with chronic diseases**

PHYSICIAN-LED ACTIVITY	PHYSICIANS' OPINIONS, N (%)				
	STRONGLY AGREE	PARTIALLY AGREE	NEUTRAL	PARTIALLY DISAGREE	STRONGLY DISAGREE
Physician writes diagnosis or clinical indication on prescriptions for chronic medications (eg, ARB for early diabetic nephropathy)	87/286 (30.4)	86/286 (30.1)	35/286 (12.2)	38/286 (13.3)	40/286 (14.0)
Physician documents potential barriers to adherence on prescriptions (eg, financial concerns)	70/283 (24.7)	106/283 (37.5)	41/283 (14.5)	39/283 (13.8)	27/283 (9.5)
Documenting the clinical reason for medication on the prescription container label, so patient will know what the medication is for (eg, ARB to protect kidneys)	152/285 (53.3)	84/285 (29.5)	27/285 (9.5)	10/285 (3.5)	12/285 (4.2)

ARB—angiotensin II receptor blocker.

clinical reason for a medication on the prescription container label, so that the patient knows what the drug is for. Regarding a potential balance in drug information delivery, 90% of respondents would like pharmacists to emphasize medication benefits over side effects.

The willingness of physicians to provide more information (ie, clinical indications or therapy concerns) on prescriptions in order to assist pharmacists in targeting adherence issues was mixed. Many physicians commented that the suggested collaborative activities would require more time and effort, and must be recognized and compensated by health care funding agencies. Results of analysis of variance showed that physicians in practice for more than 10 years were less willing to share clinical information (diagnosis or indication for prescription) with community pharmacists ( $F_{2,285}=8.288$ ,  $P<.001$ ) or document potential barriers to adherence ( $F_{2,282}=5.291$ ,  $P=.006$ ) than their colleagues who had been in practice for shorter durations were.

## DISCUSSION

Nonadherence to medications for chronic medical conditions is common and is associated with increased use of health care, costs, and increased morbidity.<sup>1-11</sup> Our results suggest that most family physicians in Saskatchewan recognize that nonadherence is a problem, with more than 80% reporting that they regularly assess adherence in their patients. This self-reported number seems high, and the exact nature of how adherence is assessed was not determined. Physicians believed that cost and medication side effects were the reasons most commonly responsible for nonadherence. Interestingly, few respondents identified barriers to adherence that were under physician control, such as complexity of medication regimen, lack of education of patients by physicians, and lack of reinforcement by physicians.

While more than half of respondents believed that the 2 health care professionals should equally share the responsibility of supporting patients with medication

adherence, community pharmacists currently appear to be rarely used for this purpose. Most physicians thought that some level of collaboration with community pharmacists would be appropriate but differed in their opinions about the types of activities that would be appropriate to promote adherence. Generally, physicians reported that pharmacists could affect adherence in 2 main ways: by identifying and notifying physicians about patient nonadherence, and by emphasizing medication benefits over side effects. Monitoring prescription refill records is a relatively effective and inexpensive method for tracking adherence,<sup>13</sup> and physicians who are notified about nonadherence in their patients might be more likely to have a patient-centred discussion about adherence at their next clinic visit. In contrast, fewer physicians were willing to include patient diagnosis and clinical indication or potential barriers to adherence on the written prescription to help pharmacists support adherence. Comments by those physicians not supportive of this activity revealed 3 common concerns: the time required; lack of financial reimbursement; and patient confidentiality and violation of the Saskatchewan Health Information Privacy Act. The third concern (patient confidentiality) is interesting, as it suggests that some physicians do not view community pharmacists as members of their patients' "circle of care."

There is some indication that clinical practice location and length of time in practice have an effect on family physicians' communication and willingness to share clinical information with community pharmacists in order to promote medication adherence. More frequent communication related to medication adherence in rural areas might be owing to the smaller communities providing more opportunities for closer contact, recognition of expertise, and shared care between health care professionals. A recent study looking at the integration of pharmacists into family practice teams in Ontario<sup>21</sup> affirmed this rationale: initial concerns of physicians related to pharmacists' scope of practice and medicolegal implications of shared care resolved once

physicians became familiar with the pharmacists' skills and roles in patient care. The greater willingness of physicians in practice for less than 10 years to share information with pharmacists perhaps reflects a greater recent emphasis on interdisciplinary care during medical training in Canada.

In Saskatchewan, 55% of family physicians work in urban centres, 17% in regional communities, and 28% in rural areas.<sup>22</sup> Thus, the distribution of our respondents closely reflected provincial physician demographics. Furthermore, the study had a response rate of 39.4%, which is higher than the response rate in the 2007 National Physician Survey—in which 31.64% of family physicians or general practitioners responded nationally and 29.25% responded from Saskatchewan.<sup>23</sup>


The responses of the Saskatchewan family physicians raise some interesting questions, which will require further study. First, how do physicians assess for medication adherence? Are the methods used sensitive enough to detect most patients with chronic medication nonadherence? Most physicians indicated a willingness to collaborate with community pharmacists to enhance medication adherence in their patients, but how can this be achieved with minimal effect on the workload and finances of these 2 health care professionals? A pilot project to implement some of the collaborative strategies looked at in this study is now warranted. In addition, further research looking at the opinions of patients and pharmacists in Canada on medication adherence might provide valuable insight that would be useful for enhancing adherence and chronic disease management.

### Limitations

While the demographics of the respondents to this survey mirror those of the provincial family physician population, we cannot rule out volunteer and nonresponse bias. Another potential bias is that approximately 25% of family physicians in Saskatchewan participated in a provincial chronic disease management program over the past 3 years<sup>24</sup>; these physicians might have experienced improved communication and interdisciplinary care in the management of patients with diabetes and coronary artery disease. Thus, their responses might have biased the study results in favour of increased collaboration with community pharmacists. Survey research (including use of Likert scales) has several disadvantages when used to obtain attitudinal and behavioural data. That also includes interpretations of terms. For example, there could be great variability in how physicians interpreted how often they "assessed adherence in patients," because we did not ask how they assess for medication adherence.

### Conclusion

Saskatchewan family physicians appreciate the importance of medication nonadherence. They frequently

assess for nonadherence among their patients, but most physicians do not appear to claim responsibility for any of its etiology. They believe that community pharmacists have a role in supporting patients with adherence, but currently seldom communicate with pharmacists regarding this issue. The physicians have indicated a willingness to work more collaboratively with community pharmacists to promote medication adherence. Further study is needed to determine if effective and practical collaborations can be developed. 

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### Contributors

**Drs Laubscher, Blackburn,** and **Taylor** and **Ms Evans** were involved in all aspects of this study, including conception and design, development of data collection instruments, data acquisition, analysis, and interpretation, drafting of the article, and final approval for publication. **Dr Laubscher** had the initial study idea and was responsible for writing the article. **Ms McKay** was responsible for data analysis and was involved in data interpretation, revision of the article, and final approval for publication.

### Competing interests

None declared

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