Implementing the Med Wise Program in rural Alberta: A feasibility study to support seniors

Heba A. T. Aref, BScPharm, MSc; Linda Kolewaski; Kyle Y. Whitfield, BSc, MSc, PhD, MCIP/CIP; Cheryl A. Sadowski, BSc(Pharm), PharmD, FCSHP, BCGP, CHE; Lisa M. Guirguis, BScPharm, MSc, PhD, FAPhA

Poor medication management in older adults contributes to adverse drug events, hospitalization and death and costs the health care system more than $400 million each year. This is a public health concern, for which older adults themselves can be one of the keys to the solution. However, older adults are not often knowledgeable enough to ask questions and share health decisions with their prescribers, which leads to poor health outcomes. The Med Wise program was adopted from the United States to empower older Canadians to be proactive in engaging pharmacists to help them manage their therapeutic regimens. This was hypothesized to lead to safer and more effective medication use with lower costs.

The Med Wise program was the first skill-based educational and behavioural intervention designed for and led by older adults to raise awareness about pharmacists’ roles and to practise skills to enhance communication with the pharmacist. Older adults, trained as facilitators, conducted a series of group discussions on medication management and communication techniques to ask about medication concerns. Med Wise increased the likelihood that older adults would raise a medication concern with their pharmacist and obtain a medication review, a process that can contribute to the safe and effective use of medication.

This program was adapted to the Alberta context by adding explanations of the Albertan pharmacist’s scope and roles, including the medication review process specific to Alberta. Med Wise focuses on increasing older adults’ awareness and access to medication supports from existing publicly funded pharmacy services in Alberta. The educational materials were trialed with 10 older adults in an older adults’ association in Edmonton before this feasibility study.

In alignment with the goal of Canada’s Strategy for Patient-Oriented Research (SPOR), we developed a partnership between researchers at the University of Alberta and citizen members of IMAGINE Citizens Collaborating for Health. The aim was to implement Med Wise as a community-based patient-oriented program to meet community-based older adults’ needs. We chose this community partner because IMAGINE’s priorities, similar to Med Wise, include encouraging patients and families to take a partnership role in their health care.

To develop a successful program, we conducted a feasibility study in 2 smaller towns approximately 300 km north of Edmonton, Alberta: Cold Lake, with a population of 15,000 residents, and Bonnyville, with 6000 residents. Feasibility studies are designed to determine if an intervention can be adapted to a new environment and answer the question, “Can it be done?” Our primary objectives were to test the feasibility of delivering the Med Wise program for seniors in rural Alberta. Specific objectives included testing the 1) demand and acceptability of the Med Wise program and 2) the acceptability and usefulness of the pre- and postquestionnaires to measure expectations, self-efficacy and knowledge.

Methods

This feasibility study is a pre and post convergent mixed-method research (Figure 1). It was approved by the University of Alberta Health Research Ethics Board. The Med Wise Program was delivered as 2 sessions at the Family and Community Support Services (FCSS) centres in Cold Lake. Topics covered included reliable sources of information on medicines, medicine-related risks for older adults, medication lists, pharmacy services, 5 questions to ask about medications and self-advocacy (Table 1). The program was delivered by L.K., a senior and citizen ambassador for IMAGINE. The program was advertised in newsletters and local newspapers, posted in local facilities and posted to the town Facebook page, and an information letter was faxed to all local pharmacies.
Older adults (age >55 years) were eligible for participation if they were 1) able to speak and read English, 2) able to provide consent and 3) regularly took 1 or more medications. Participants completed a survey before and after the program (Appendices 1 and 2, available in the online version of the article). The survey tool consisted of questions on medication self-efficacy,14 expectations15 and knowledge. The medication use self-efficacy scale has 2 parts: 1) self-efficacy taking medication with a Cronbach’s alpha of 0.77 and 2) self-efficacy learning about medications with a Cronbach’s alpha of 0.68.14 We added 1 additional question on medication information sheets and created the “talking with pharmacists” scale with 5 new questions. The expectations scale was adapted from prior work.15 We reverse-coded 1 item, as participants were less likely to identify pharmacists after learning about the variety of pharmacy-related staff working in a pharmacy setting. Expectations and self-efficacy scales were calculated by taking the mean of individual item scores. The knowledge survey was created to reflect the course content, and scale scores were the sum of correct items.

Older adults were invited to participate in a qualitative telephone interview asking about their program experiences, perceived benefits and barriers to participation. In addition, three stakeholders who organized or facilitated the education sessions were interviewed about the perceived benefit of the program and facilitators and barriers. Interviews were audio-recorded and transcribed. The semistructured interview guide can be found in Appendix 3.

**Analysis**

Data from the survey were characterized using nonparametric descriptive statistics (i.e., median and mode scores). A qualitative content analysis was used to analyze the transcripts. The transcripts were reviewed using a systematic approach to identify core concepts and “draw realistic conclusions” using labels that stayed close to the participants’ original words.16 One researcher reviewed the transcripts to identify key concepts and grouped them into categories with oversight and input by another team member. All team members reviewed the analysis and provided comments before consensus was reached.

**Results**

In the fall of 2019, Med Wise was advertised for sessions in and around Cold Lake and Bonnyville. Seven participants attended the program in Cold Lake, with no attendance in other areas. Attendees were predominantly female (6/7, 86%) in their 50s (3/7, 43%), 60s (1/7, 14%) and 70s (3/7, 43%); and most (5/7, 71%) rated their health as “very good.”

**Quantitative Findings**

All participants who attended the program until the end were able to fill in all the items in the pre-post survey (Table 2). The facilitator indicated that participants did not have difficulties completing the survey. The median of the participants’ expectations demonstrated a trend toward improvement after program delivery (Table 2). After program delivery, the median of self-efficacy taking medication and talking to the pharmacist showed a trend toward improvement. Looking at specific items, more participants reported they were less sure in identifying which pharmacy staff member was the pharmacist, and more participants were extremely sure or very sure about asking their pharmacist if they should stop taking medication.
### TABLE 1 Description of the intervention (Med Wise Program*)

**Session 1:**
**Objective:** To raise awareness about:
1. Medication risk
2. Pharmacist’s role in Alberta
3. Significance of keeping a medication list

| Activity | Description |
|----------|-------------|
| 1.1 Introduction | Describing what IMAGINE Med Wise is and why seniors should be concerned about medications |
| 1.2 Warm-up activity | Role play titled “Standing in Line under Pressure”; older adults are triggered to think of what to do if they need to ask a question in a busy pharmacy |
| 1.3 Discussion about medication risk | Interactive peer-led education about medication risks and side effects |
| 1.4 Education about medication list | Explaining the significance of an updated detailed personal medication list; Introducing Alberta resource of “MyHealth Record” on the web and introducing 3 different tools to help seniors develop and update their medication list |
| 1.5 Review of the trusted health and medication information resources | Introducing Access to Patients electronic health record: myhealth.alberta.ca; Introducing Alberta program: Health Care 101 |
| 1.6 Illustration of the pharmacist’s role | Discussing the pharmacist’s role in Alberta (display-related poster) |
| 1.7 Finalizing the session | Reinforcement of all of the above through a summary and home practice (homework) |

**Session 2:**
**Objective:** Practising communication skills needed to ask the pharmacist about medications

| Activity | Description |
|----------|-------------|
| 2.1 Reviewing medication list importance | Discussing the participants’ reflections on the experience of developing or updating a medication list |
| 2.2 Education about medication reviews | Introducing care plan activities available from/with the pharmacist |
| 2.4 Demonstrating communication skills | Showing a poster and distributing blank forms for the “5 Questions to Ask and Discuss”† |
| 2.5 Practice of the 5 Questions Tools | Exercise: Pair and share to explore potential questions to ask and discuss with pharmacists |
| 2.6 Tips to talk to your pharmacist | Empowering seniors to ask about and discuss their medication. Tips to help a better communication (e.g., learning to use pharmacist’s name and asking for private counselling area) and discussing how to use the C.U.S. words (I am Concerned/Uncomfortable or this is a Safety issue); Role-plays are used to trigger group discussion and reflection on different scenarios that address patients’ concerns, goals, identification of barriers and plans to address them |
| 2.7 Finalizing the session | Reinforcement of all of the above through a summary and home practice |

---

*The Med Wise Program consists of 2 peer-led interactive sessions adopted into the Canadian context regarding the pharmacist’s role. The aim of the program is to optimize the older adults’ interaction with their pharmacists to enable them to better use their medicines.

†“5 questions to ask and discuss with your pharmacist” is a tool to help the patient address his or her concerns, adopted with permission from the Institute For Safe Medication Practices (for more information, visit www.safemedicationuse.ca).
Individual expectation and self-efficacy scales questions are available in Appendix 4.

The mode, median and minimum knowledge score increased after program delivery, suggesting that participants learned about medication use, accessing health information and pharmacists’ roles.

**Qualitative findings**

Participants who completed the Med Wise program (**n = 5**), onsite organizers (**n = 2**) and a peer facilitator (**n = 1**) were invited for individual semistructured telephone interviews. Onsite organizers were a male and female manager from the FCSS, and the facilitator (L.K.) was a representative of IMAGINE. Six categories were identified in characterizing the Med Wise project feasibility.

**Increased awareness about their pharmacist’s role.** All participants agreed that the program was informative and created greater awareness about accessing electronic health records and pharmacists’ roles, such as providing medication reviews. “When you contact the pharmacist, there’s so much more that he/she can do than I ever acknowledged” (P5). These findings supported the improvement in survey knowledge scores.

**Self-efficacy toward medication-related discussions.** Participants described feeling more confident and capable of initiating conversations with pharmacists about their medications. "I can talk to a pharmacist knowing full well that the pharmacist has been trained, not just to answer my questions about this medication, but when am I taking my drugs. . . . The prescription says once a day. Well, when is [it] once a day?” (P3).

**Facilitators of the Med Wise program.** For the organizers, the minimal cost was the leading facilitator. For the participants, facilitators included simple interactive presentation, an informal approach through peer-to-peer learning, encouraging the participants’ autonomy, short session duration, final program reflection and the facilitator’s excellent communication skills. “There was a lot of discussion and things like that—people shared their experiences” and “It wasn't like somebody was just teaching you something. It was good participation” (P22).

**Perceived barriers to Med Wise implementation.** These were the number of sessions (either 2 or 1), lack of food and inability to apply information. The organizer in town 2 (i.e., no recruitment) described 2 barriers specific to the rural setting—people had well-established relationships with their pharmacists and distrust outsiders. The facilitator felt role-playing was not practical, as it placed older adults in a vulnerable position in front of their peers.

**Disappointment in lack of peer engagement.** Participants expressed frustration about their peers’ lack of interest, despite advertisements and promotion, because it could have been more interactive and beneficial.

**Suggestions to increase attendance.** Both participants and organizers suggested combining the 2 sessions into 1, providing food, advertising the incentive (i.e., gift card), using Facebook, senior-targeted marketing and “local champions” as facilitators.

---

**TABLE 2 Participants’ expectations, self-efficacy and knowledge scores (**n = 7**)**

|                                      | Pre-Intervention (**n = 7**) | Post-Intervention (**n = 5**)* |
|--------------------------------------|-----------------------------|--------------------------------|
|                                      | Mode | Median | Min | Max | Mode | Median | Min | Max |
| Expectations of pharmacist† (8 items)| 5    | 4.5    | 2   | 5   | 5    | 5      | 2   | 5   |
| Self-efficacy: Taking medication‡ (4 items) | 5    | 4      | 1   | 5   | 5    | 5      | 2   | 5   |
| Self-efficacy: Learning about medication‡ (4 items) | 5    | 4      | 1   | 5   | 4.5  | 1      | 5   |
| Self-efficacy: Talking to pharmacists‡ (6 items) | 4    | 3.5    | 1   | 5   | 4    | 1      | 5   |
| Knowledge score out of 17§           | 14   | 8      | 1   | 14  | 15   | 14     | 14  | 17  |

*Two participants did not complete the postprogram survey.

†Pharmacy expectations: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.

‡Self-efficacy scale: 1 = not at all sure, 2 = somewhat sure, 3 = quite sure, 4 = very sure, 5 = extremely sure.

§Knowledge score is based on 17 questions asking about general information of health and medication; each correct answer was scored as 1 and summed to create a scale score.
and organizers. Some participants suggested providing Med Wise to caregivers and getting the local older adults’ groups involved. “We’ve got a free lunch coming up on Thursday. And because it’s free, we’ve got 375 people coming, where most of our events we have 150” (P4).

Discussion
Participants and organizers felt the Med Wise program raised awareness of medication issues and helped older adults develop medication-related skills. Qualitative findings support the survey trends with self-reported changes in expectations, self-efficacy and knowledge scores. Still, challenges in delivery and recruitment were identified as areas for improvement.

Recruitment of older adults into research is an identified barrier in clinical and social sciences research. Despite a multifaceted advertising approach, attendance was low. Participants’ suggestions for food and reducing to a single session were echoed in the literature. Relationships with local organizers, including older adult groups and community pharmacists, should also be strengthened, particularly in rural areas. The Med Wise program was piloted in an urban centre, where relationships and health care practices may differ from rural settings. Still, the Med Wise program must support existing patient-pharmacist relationships.

Despite the low attendance rate, acceptance was high among attendees and stakeholders. The program was feasible and well received. Participants were receptive to information and appreciated the informal learning environment. Role-plays, an evidence-based approach to advocacy skills, were not well received. Suggestions included a script or video model of a patient interacting with a pharmacist plus guided discussion. Paired with real-world application, such models can lay the foundation for communication skill development.

Observations from the facilitator indicated that seniors were able to complete the pre- and postquestionnaires. Although insufficient data were collected to formally evaluate the survey tools, the expectations scale may have a ceiling effect; thus, items with high scores may be removed or included only to anchor other scores. Self-efficacy toward talking with pharmacists scale had the lowest scores at baseline, indicating the potential to measure improvements. Overall, the survey was feasible for use in future research.

Limitations
This feasibility research was not intended for generalizability. Still, the findings are limited by sample size, the use of one facilitator and a lack of fidelity checks on program delivery. Future research should explore strategies to engage older adults and deliver group-based peer-led health educational interventions. Learnings from this research will help address the treatment and delivery issues for future research.

Conclusion
This feasibility study indicated that we “can” offer the Med Wise program in rural Alberta. Despite the low attendance rate, the program and its measurement tools were feasible to implement. Solutions to address and improve the program engagement and implementation will be incorporated in future provisions of Med Wise.

From the Faculty of Pharmacy and Pharmaceutical Sciences (Guirguis, Aref, Sadowski) and Faculty of Extension (Whitfield), University of Alberta, Edmonton; and IMAGINE Citizens (Kolewaski), Edmonton, Alberta. Contact Iguirgu@ualberta.ca.

Author Contributions: L. M. Guirguis contributed to conceptualization, methodology, analysis, investigation, writing of the original draft, review and editing, visualization, supervision, project administration and funding acquisition; H. Aref contributed to conceptualization, methodology, analysis, visualization and review and editing; L. Kolewaski contributed to conceptualization, methodology, analysis, data curation, review and editing and visualization; K. Y. Whitfield contributed to conceptualization, methodology, analysis, investigation, review and editing and visualization; C. A. Sadowski contributed to conceptualization, methodology, analysis, review and editing and visualization.

Conflicts of Interest: The authors declare no conflict of interest.

Funding: The authors received no specific funding for this work.

ORCID iDs: Lisa M. Guirguis https://orcid.org/0000-0002-7773-4403
Cheryl A. Sadowski https://orcid.org/0000-0002-4526-7054

References
1. Canadian Institute for Health Information. Drug use among seniors in Canada. Available: www.cihi.ca/en/drug-use-among-seniors-in-canada (accessed Jul 29, 2020).
2. Canadian Institute for Health Information. Adverse drug reaction–related hospitalizations among seniors, 2006 to 2011. 2006;22. Available: https://secure.cihi.ca/free_products/Hospitalizations%20for%20ADR-ENweb.pdf (accessed Jul 29, 2020).
3. Morgan SG, Hunt J, Rioux J, Proulx J, Weymann D, Tannenbaum C. Frequency and cost of potentially inappropriate prescribing for older adults: a cross-sectional study. CMAJ Open 2016;4(2):E346.
4. Coleman K, Austin BT, Brach C, Wagner EH. Evidence on the chronic care model in the new millennium. Health Aff (Millwood) 2009;28(1):75–85.
5. Martin BA, Chewning BA, Margolis AR, Wilson DA, Renken J. Med Wise: A theory-based program to improve older adults’ communication model in the new millennium. Health Aff (Millwood) 2009;28(1):75–85.
with pharmacists about their medicines. *Res Soc Adm Pharm* 2016;12(4): 569–77.

6. Government of Canada CI of HR. Strategy for patient-oriented research—patient engagement framework—CIHR. 2014. Available: https://cihr-irsc.gc.ca/e/48413.html (accessed Jul. 29, 2020).

7. Adesanoye D, Guirguis L. Patient engagement in pharmacy practice research. *Can Pharm J* 2017;150(2):94–7.

8. Al Hamarneh YN, Rosenberg-Yunger Z, Saxena A, Waite NM, Dolovich L, Tsuyuki RT. Patient-oriented pharmacy practice research: why should we care? *Can Pharm J* 2020;153(3):133–6.

9. Med Wise Alberta. IMAGINE. 2019. Available: https://imaginecitizens.ca/2019/12/03/med-wise-alberta/ (accessed Jul. 29, 2020).

10. Health care 101: background. Available: https://myhealth.alberta.ca/HCI101/about-health-care-101/background (accessed Jul. 29, 2020).

11. Tickle-Degnen L. Nuts and bolts of conducting feasibility studies. *Am J Occup Ther* 2013;67(2):171–6.

12. Bowen DJ, Kreuter M, Spring B, Cofta-Woerpel L, Linnan L, Weiner D, et al. How we design feasibility studies. *Am J Prev Med* 2009;36(5):452–7.

13. ISMP Canada. 5 questions to ask about your medications. Available: https://www.ismp-canada.org/medrec/5questions.htm (accessed Jul. 29, 2020).

14. Cameron KA, Ross EL, Clayman ML, et al. Measuring patients’ self-efficacy in understanding and using prescription medication. *Patient Educ Couns* 2010;80(3):372–6.

15. AlGhurair SA, Simpson SH, Guirguis LM. What elements of the patient–pharmacist relationship are associated with patient satisfaction? *Patient Prefer Adherence* 2012;6:663.

16. Bengtsson M. How to plan and perform a qualitative study using content analysis. *NursingPlus Open* 2016;2:8–14.

17. Chatters R, Newbould L, Sprange K, et al. Recruitment of older adults to three preventative lifestyle improvement studies. *Trials* 2018;19(1):121.

18. Weil J, Mendoza AN, McGavin E. Recruiting older adults as participants in applied social research: applying and evaluating approaches from clinical studies. *Educ Gerontol* 2017;43(12):662–73.

19. Bandura A. *Self-efficacy: the exercise of control*. New York: Worth Publishers; 1997.