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ADVANCES IN PHARMACY PRACTICE

Enhanced communication between inpatient and community pharmacists to optimize medication management during transitions of care

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ABSTRACT

Objectives: To describe the Pharmacy Communication Partnership (PROMPT) program's approach to improving medication management for patients during transitions from hospital to the community.
Setting: Two general internal medicine units within a multisite academic hospital in Canada.
Practice innovation: Designed by an interprofessional working group, PROMPT uses evidence-informed approaches to facilitate communication between pharmacists in different settings: faxing of the discharge prescription and medical discharge summary to a patient's community pharmacy, followed by a telephone call to the community pharmacist.
Evaluation: A multimethod cross-sectional study used telephone surveys and retrospective chart reviews to describe: 1) the characteristics of patients that hospital pharmacists thought would benefit from PROMPT and the community pharmacies that served them; 2) the number and nature of communication attempts made by community and hospital pharmacists; and 3) community pharmacists' views about PROMPT's potential impact on continuity of care and potential program enhancements.
Results: A convenience sample of 100 patients (median age 77 years, interquartile range 66 to 83) who received care from 86 pharmacies were used to evaluate the program. The majority of community pharmacists participating in the surveys considered the intervention to be helpful. Of the 53.7% (n = 44/82) community pharmacists who received discharge summaries, 93.2% (n = 41/44) found the summaries to be useful. Themes arising from community pharmacists' comments were categorized into 3 topics: 1) the benefits of PROMPT; 2) topics of discussion and clarification during telephone calls with hospital pharmacists; and 3) future program improvements.
Conclusion: Community pharmacists described PROMPT as a time-efficient and helpful bridge linking community pharmacy to hospital inpatient care. Opportunities for future research include determining the characteristics of patients who may benefit most from PROMPT, determining the optimal components of discharge information needed by community pharmacists to enhance medication management, and evaluating whether follow-up telephone calls from the hospital to community pharmacists are necessary for all patients.

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Key Points

Background:

- Transitions in care are vulnerable moments for patients with complex needs, who, at the time of hospital discharge, may be at increased risk of adverse drug events and hospital readmission.
- The Pharmacy Communication Partnership (PROMPT) program, developed by an interprofessional team, is based on evidence-based best practices regarding medication management at times of hospital discharge.

Findings:

- The PROMPT program, which consists of faxing the discharge prescription and medical discharge summary to a patient's preferred community pharmacy and a follow-up telephone call to the community pharmacist, was well received by community pharmacists.
- The majority of pharmacists who received the medical discharge summary found it useful.
- Opportunities for future research include determining the characteristics of patients who may benefit most from PROMPT, exploring the optimal components of a discharge summary for community pharmacists to enhance medication management, and assessing the necessity of a follow-up telephone call from the hospital to community pharmacists for all patients.

Patients navigating from hospital to home are at a particularly vulnerable period in their health care journeys, with risks of medication discrepancies that can lead to adverse drug events and hospital readmissions.[1-3] Those with complex needs, such as increased numbers of medical comorbidities and medication use, are at heightened risk.[2] Moreover, poor communication between health care providers is a significant contributor to medication discrepancies.[3,4] Community pharmacists report a lack of standardization in the quality of communication received from hospitals during a patient's transition home.[5,6] Some pharmacists report receiving information far too infrequently, and in the cases where a discharge summary was received, it is either too detailed or not detailed enough, which compromises patient safety.[5]

Many interventions addressing this communication deficit have been evaluated among various health professions to improve the transition process, but interventions involving community pharmacists are limited.[1,4,7-9] A systematic review found that increased collaboration between acute care pharmacists and other hospital health care workers improves postdischarge outcomes such as emergency visits, hospital readmission, and mortality.[10] A retrospective cohort study demonstrated the benefits of outpatient pharmacy involvement in a discharge prescription program on reducing 7-day and 30-day hospital readmission rates.[11] A Danish randomized controlled trial demonstrated reduced 30- and 180-day readmissions when patients received an extended pharmacist intervention (medication reconciliation on admission and discharge plus follow-up with primary care providers, caregivers, and pharmacy [when necessary]) compared with those who received usual care or a basic pharmacist intervention.[12] A 2018 initiative demonstrated that information-sharing with community pharmacists, coupled with community pharmacy–initiated follow-up telephone calls to patients, reduced 30-day readmission rates.[9] These are examples of the positive impact that pharmacists can have on patient safety during transitions in care from hospital to community.

Objectives

The Pharmacy Communication Partnership (PROMPT) program aims to improve transitions in care from the hospital to the community for patients with complex needs through a standardized approach of information-sharing between hospital and community pharmacists. The program features 2 points of contact between the pharmacists in different settings: faxing of the discharge prescription and medical discharge summary to a patient's preferred community pharmacy and a telephone call to the community pharmacist for follow-up. The objectives of this study were to describe 1) the characteristics of patients that were considered to be complex by hospital pharmacists (as a means to define patient complexity) and the community pharmacies that serve them; 2) the number and nature of communication attempts made by community and hospital pharmacists; and 3) community pharmacists' views about the impact of PROMPT on continuity of care and potential program enhancements.

Setting

This multimethod cross-sectional study took place from February to November 2016 at 2 general internal medicine units located within a multisite academic hospital located in Toronto, Ontario, Canada.

Practice innovation

Development of intervention

In our jurisdiction, community pharmacists lack routine access to information that is needed to optimize their contributions to patient care. Equipping community pharmacists with patient health information (e.g., discharge medications, reason for admission, laboratory and other investigations) is a first step in formalizing their roles at transitions in care. The PROMPT program builds on developmental work led by an interprofessional working group (see Supplemental Appendix A) that sought to improve medication management for community-dwelling patients with complex needs. Representatives included hospital pharmacists practicing on the general internal medicine units, community pharmacists, a patient with a history of complex medical conditions, a physician leader in primary care, academics and pharmacy leaders, and a pharmacist practicing as part of an interprofessional primary care team. Consistent with the approach recommended in the Medical Research Council guidance on developing complex interventions,[13] the group began by identifying evidence-based practices in medication management for patients with complex

needs: best possible medication history at admission, identification of potentially high-risk patients groups, integrated admission to discharge reconciliation, and processes that included pharmacists and predischarge patient education.[10,14-16] Evidence supporting roles for community pharmacists was notably absent, presenting an important gap.[1,5] Community pharmacists are embedded in local communities, where they provide medication management services. They can help patients and caregivers navigate the complexities of medication management after discharge by offering around-the-clock access to their services without the need for an appointment.

In the deliberations of the working group, the challenges of defining the characteristics of a "complex" patient were quickly realized. Many pharmacy-focused interventions define complexity in terms of a particular number of medical conditions (i.e., multimorbidity) or a particular number of medications (i.e., polypharmacy). Yet, the group recognized that a patient might be considered "complex" by a hospital pharmacist for other reasons, including age, length of stay, psychological or social conditions, etc.[17] Therefore, in this developmental phase of our work, we adopted an arguably unconventional approach. Rather than articulating patient eligibility criteria a priori, during our training of hospital pharmacists to provide the intervention we encouraged them to provide the intervention to any patient that they considered to have complex needs who may benefit. We then sought to describe the patient characteristics that emerged as one of our study objectives to inform eligibility criteria in future iterations of our work.

Intervention

PROMPT involves outreach by hospital pharmacists to those in the community at the time of hospital discharge for identified patients with complex needs. The inclusion criteria for a patient with complex needs were purposely kept broad: adults aged 18 years and over, admitted to a general internal medicine unit for more than 48 hours, and considered to be complex as determined by the hospital pharmacist.

On admission, the hospital pharmacist consults the electronic patient record to identify whether the patient's usual community pharmacy has been documented during previous admissions to hospital. If so, the pharmacist confirms that this remains the patient's preferred pharmacy. If not, the pharmacist consults a provincial database of claims for prescription medications to determine whether the patient usually frequents a particular pharmacy. If a usual community pharmacy is not identified, the hospital pharmacist educates the patient about the importance of selecting a usual pharmacy in terms of both safety and convenience. Patients are encouraged to select a pharmacy before discharge. As illustrated in Figure 1, for patients with complex needs (determined through judgment of hospital pharmacist), around the time of discharge the hospital faxes to the identified community pharmacist a discharge package, which includes a copy of the hospital discharge summary (when possible), the discharge prescription (which outlines new medications, those to be continued, and those stopped), and contact information for the hospital pharmacist most involved in the patient's care. A follow-up telephone call is then made by the hospital pharmacist within 30 to 60 minutes after faxing to confirm receipt of the package and to determine if the community pharmacist has any questions or concerns. The community pharmacists also have the option to call the hospital pharmacist with any questions after the initial telephone call is completed.

Evaluation

This developmental phase of the evaluation of PROMPT was conducted with a convenience sample of 100 patients selected from the 2 hospital sites. After the PROMPT process was followed, the hospital pharmacists used a secure e-mail platform to send the patient's name, medical record number, and community pharmacy contact information to a research coordinator, who then conducted a telephone survey with the community pharmacies within 4 to 7 days of discharge (see Supplemental Appendix B). The location and business type (independent, chain, banner, franchise, or mass merchandiser or food store) of the pharmacies were recorded. The purpose of the survey was to assess the intervention fidelity and the perspectives of community pharmacists involved in the patients' care. After patient enrollment ended, a retrospective audit of electronic health records was conducted to determine each patient's age, the number of medications being taken at discharge, and the number of days admitted.

The telephone surveys were conducted as a quality improvement project. Participating community pharmacists were made aware of the quality improvement intention of data collection before they participated and given the option to decline before the survey began, and the results are reported in aggregate to maintain participants' confidentiality. Institutional Research Ethics Board approval was obtained from the University of Toronto Faculty of Pharmacy Undergraduate Research Ethics Review Committee for the retrospective chart review.

Data analysis

Descriptive statistics were computed for all variables, including frequency counts and proportions, medians and ranges for categoric variables, and means and standard deviations for continuous variables. All statistical analyses were conducted with the use of IBM SPSS Statistics, version 22. The patients' reasons for admission were categorized according to the International Statistical Classification of Diseases and Related Health Problems 5 revised by the Canadian Institute for Health Information in 2009.[18]

Qualitative data sources included community pharmacist responses to open-ended questions and general comments made by pharmacists throughout the telephone call (i.e., those not explicitly prompted by the survey guide). Thematic analysis was used to generate codes that emerged from the data.[19] The coding scheme was developed by 1 author (S.L.), reviewed by 2 other investigators (L.M.M., S.J.T.G.), and refined. Themes were determined by discussion among team members until consensus was achieved.

Results

Patient characteristics

One hundred patients were selected to receive the PROMPT intervention. As presented in Table 1, the median age of the

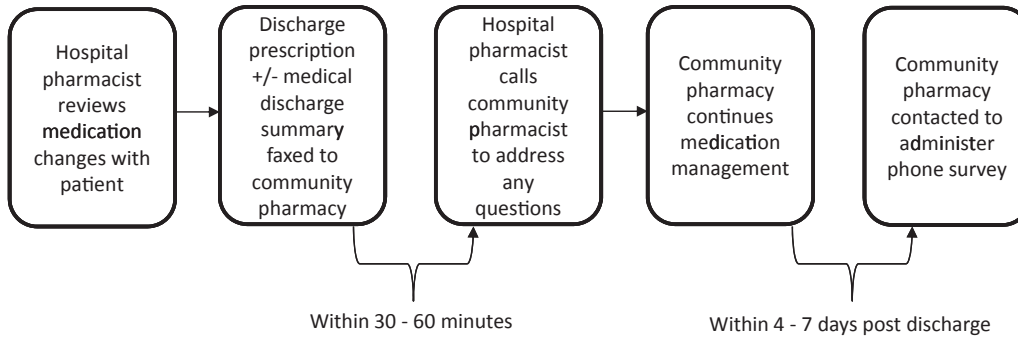

Figure 1. Flow diagram of the PROMPT study.

100 patients who received the intervention was 77 years, with an interquartile range (IQR) of 66 to 83. Of the 94 patients who were successfully located in the electronic health record system, 92.5% (n = 87/94) had more than 5 medications listed in the discharge summary, with the median being 11 (IQR 8 to 14). The median length of stay was 7 days (IQR 4 to 11). The most common reasons for admission to hospital among the patients enrolled in the PROMPT study were disease of the circulatory system (16%; n = 15) and "other categories of diseases" (16%; n = 15), which included neoplasms, other factors influencing health status, digestive system, genitourinary system, external causes of morbidity and mortality, and skin and subcutaneous tissue. The frequencies of other categories of reasons for admission ranged from 6.4% to 10.6% (n = 6 to 10).

Community pharmacy participation and characteristics

The 100 patients selected for PROMPT were serviced by 86 different community pharmacies. Two pharmacies each received 3 different patient discharges, and 9 pharmacies each received 2 different patient discharges, although the pharmacists were not necessarily the same for each patient. One of the pharmacies participated twice due to the patient being readmitted during the intervention period. The other 74 pharmacies received only 1 patient each. Every patient's pharmacy was successfully reached for follow-up, with 3 of those pharmacies reporting not having received a prescription for the patient. Of the 86 pharmacies, almost one-half (n = 36/86) were independent pharmacies, whereas the rest belonged to franchises or corporations. The locations of the community pharmacies were mostly distributed within Toronto, with 75.6% (n = 65/86) being located within an 8-km radius of both sites, and 23.3% (n = 20/86) located between an 8-km to 25-km radius.

Regarding the community pharmacist telephone surveys, sufficient information about the community pharmacy and patient involved was available to the research team to contact 89 pharmacists. However, not all 89 pharmacists completed the entire survey. Language barriers between the pharmacists and interviewer precluded participation in 3 cases, 3 pharmacists reported that a discharge prescription was not received, and 1 pharmacist declined to complete the survey because the patient refused to take the prescribed medications.

Intervention characteristics

As outlined in Table 2, based on the community pharmacist telephone surveys, 93% of patients (n = 78/84) had prescriptions filled, and 54% of community pharmacists (n = 44/82) received a discharge summary. Some of the reasons for not filling the prescriptions involved administrative issues from the hospital, such as missing essential information on the prescription that was necessary for dispensing (e.g., prescriber signatures). Although incomplete prescriptions led to a small percentage of patients who had not had their prescriptions filled at the time of the telephone survey, many of the community pharmacists were able to resolve these issues and dispense the medications before the telephone survey. Other reasons for unfilled prescriptions were unrelated causes, such as the patient not yet having arrived at the pharmacy by the time of the call or the patient having an adequate supply at home left over from before hospital admission. Overall, 27% of community pharmacists (n = 21/78) called the hospital pharmacists for prescription clarification; 76% (n = 16/21) of these had already answered the follow-up telephone call and felt that they needed to call back for additional clarification.

Feedback on PROMPT

The vast majority (n = 79/80; 99%) of community pharmacists who participated in the telephone survey considered the PROMPT intervention to be helpful. Of the pharmacists who received discharge summaries (n = 44/82; 54%), most of them (n = 41/44, 93%) found it to be useful.

Themes arising from responses to open-ended questions and casual comments from the pharmacists during the survey were categorized into 3 main topics: 1) the benefits experienced through the PROMPT intervention; 2) the topics of discussion and clarification during telephone calls with hospital pharmacists; and 3) program improvements for the future. A complete list of the themes is presented in Table 3. The themes are discussed in more detail in the following sections.

Benefits experienced through the PROMPT intervention

The overall qualitative response patterns of the pharmacists aligned with positively supporting the PROMPT initiative. The most prominent benefit that community pharmacists

Table 1
Characteristics of patients who received the PROMPT intervention

Patient characteristics	Value
Age of patient at discharge, y (n = 100)	
Mean ± SD	72.8 ± 15.1
Median (IQR)	77 (66–83)
Groups of patients by age at discharge, y (n = 100)	
21–40	4 (4%)
41–60	13 (13.0%)
61–80	51 (51.0%)
≥ 81	32 (32%)
Number of medications at discharge (n = 94)[a]	
Mean ± SD	11.7 ± 4.9
Median (IQR)	11 (8–14)
Groups of patients by number of medications at discharge (n = 94)[a]	
1–5	7 (7.4%)
6–10	34 (36.2%)
11–15	35 (37.2%)
16–20	13 (13.8%)
21–25	5 (5.3%)
Length of stay, d (n = 94)[a]	
Mean ± SD	10.7 ± 11.6
Median (IQR)	7 (4–11)
Groups of patients by length of stay, d (n = 94)[a]	
1–10	68 (72.3%)
11–20	15 (16.0%)
> 20	11 (11.7%)
Reasons for admission (n = 94)[a]	
Certain infections and parasites	6 (6.4%)
Endocrine, nutritional, and metabolic	7 (7.4%)
Nervous system	7 (7.4%)
Musculoskeletal system and connective tissue	7 (7.4%)
Mental and behavioral	8 (8.5%)
Injury and poisoning	9 (9.65)
Respiratory system	10 (10.6%)
Unclassified signs and symptoms	10 (10.6%)
Circulatory system	15 (16.0%)
Other categories of diseases[b]	15 (16.0%)

[a] Characteristics for 6 patients were unable to be found through electronic patient records during retrospective patient data review.
[b] Diagnoses with frequencies of 5 or less were collapsed into 1 group to help preserve patient identity. Categories included neoplasms, other factors influencing health status, digestive system, genitourinary system, external causes of morbidity and mortality, and skin and subcutaneous tissue.

reported was the increased time given to prepare prescriptions and compliance packaging, identify and resolve discrepancies, and be ready for delivery. Many community pharmacists identified feeling rushed when dealing with discharge prescriptions, especially for patients with complex needs, and time pressures can reduce the ability to catch and resolve medication errors. The faxing of the discharge information before the patient's arrival at the community pharmacy gave the pharmacists an opportunity to concentrate on the prescription and reconcile any discrepancies. The addition of a discharge summary and the opportunity to discuss with the hospital pharmacists were noted to be helpful in avoiding the need to contact the prescriber.

Topics of discussion during telephone calls

Discussions between hospital and community pharmacists commonly covered issues related to prescription clarification, such as missing information about the medication prescribed or the prescriber, or to clarify directions for use. Administrative requirements for medication insurance coverage (e.g., authorization codes for products with restricted access, formulary alternatives for nonformulary items) and medication packing and supply issues (e.g., quantities prescribed, availability of formulations, compliance packaging) were also frequently discussed. Finally, pharmacists used the calls to resolve patients' actual and potential drug therapy problems, particularly related to potential allergies and drug interactions.

Program improvements for the future

Not many suggestions for improvements were given, because most of the community pharmacists said that no improvements were needed. However, some recommended ensuring more complete and legible information on the faxed prescription, considering a patient's discharged medication supplies during the transition period and ensuring that complete and accurate contact information for the hospital pharmacist was provided, because it might alleviate the need for the hospital pharmacist follow-up call. A small number of the pharmacists (n = 3/44; 6.8%) who received the discharge summary questioned whether it was a necessary component of the program. This was because the discharge summary did not fully address all of the medication changes, or the encountered prescription issue was not related to medication changes, such as missing administrative codes required for drug coverage. Also, some of these pharmacists reported that the discharge summary was too long, with an overwhelming amount of information.

Discussion

Patients included in the PROMPT program (i.e., those that hospital pharmacists considered to have "complex" needs) were older adults with prolonged hospital stays, taking multiple medications, and admitted to hospital for a variety of medical conditions. These characteristics are well aligned with recognized risk factors for drug therapy problems. The PROMPT program was well received by community pharmacists, because it allowed community pharmacists to be more prepared for these more complex patients. The majority of community pharmacists reported receiving a patient's prescription(s) and follow-up telephone call. Just over one-half of pharmacists received the medical discharge summary, and the majority of those who received it found it to be useful. For future iterations of PROMPT, community pharmacists emphasized the need for more complete and legible information on the faxed prescription and the need to receive complete and accurate contact information for hospital pharmacists. A small number of the pharmacists who received the medical discharge summary questioned its usefulness as part of the program.

Since our work on PROMPT began, others have published models for integrating community pharmacists into medication management at times of transitions. For example, Feldman et al. conducted a quality improvement initiative that involved communication of hospital admission and discharge information to the community pharmacies of patients considered to be at high risk of hospital readmission, coupled with follow-up telephone calls made by the community pharmacies to the patients at days 8 and 25 after discharge.[9] The community pharmacists identified and addressed drug

Table 2
Community pharmacists' recollection of PROMPT components received during telephone survey

PROMPT component[a]	Number in agreement/number of community pharmacists asked (%)
1. Received discharge prescription by fax	84/87 (96.6%)
2. Community pharmacy dispensed discharge prescription(s)	78/84 (92.9%)
3. Received discharge summary by fax	44/82 (53.7%)
4. Found discharge summary useful	41/44 (93.2%)
5. Received telephone call from hospital	77/82 (93.9%)
6. Answered telephone call from hospital	65/74 (87.8%)
7. Received call and fax before dispensing to patient	70/79 (88.6%)
8. Called back to hospital pharmacist	21/78 (26.9%)
9. Questions resolved	53/54 (98.1%)
10. Found PROMPT intervention helpful	79/80 (98.8%)

[a] Pharmacists asked to indicate agreement as Yes/No.

therapy problems, resulting in a significantly lower 30-day readmission rate in the intervention group.

A key difference between PROMPT and the Feldman et al. study is how much of a departure from usual care each program demands. In the Feldman et al. study, nurses screened each patient for his or her risk of readmission, and an additional pharmacist was involved with each patient to facilitate follow-up. Coordination between the hospital and a community pharmacy was required, including granting electronic health record access to pharmacists who were not hospital employees, which may not be feasible in other institutions. The intervention studied in PROMPT incorporates easily into existing care, requiring no additional health providers and only minimal increases to pharmacists' workload.

A recent meta-analysis demonstrated reductions in readmissions when pharmacy-supported transitions in care interventions were compared with usual care.[8] Subgroup analysis showed a reduction in 30-day readmission rates for patients who received pharmacy-supported interventions that included patient-centered follow-up care in the form of telephone calls, clinic visits, or a combination of the two. Although PROMPT does not explicitly include community pharmacy–initiated follow-up telephone calls to enrolled patients as part of the intervention, PROMPT helps community pharmacists to deliver more comprehensive follow-up by providing them with access to important patient information. Many contend that monitoring patients after discharge is an implicit duty of community pharmacists, and that would only have been made easier and more meaningful by their receipt of hospital discharge information. Providing comprehensive information to community pharmacists about their patients with complex needs increases community pharmacists' opportunity to provide adequate follow-up, allowing the detection and resolution of postdischarge drug therapy problems.

Community pharmacists' suggestions about optimizing the legibility and completeness of contact information for hospital pharmacists largely stemmed from a few participants who questioned whether the follow-up telephone call from the hospital pharmacist for all patients was necessary. They postulated that program workload could be reduced for both hospital and community practitioners by providing contact information and allowing community pharmacists to reach out if questions arose. Although seemingly sensible from a workload perspective, our team will study this further in the next iteration of PROMPT's evaluation. Active telephone calls

Table 3
Themes arising from community pharmacist telephone surveys

Concept	Example
Benefits	
Advanced notice for preparation	Gave enough time to prepare prescription and blister packs, sort through discrepancies, and ready for delivery
	Reduced patient wait time
Improved communication	Contact back to hospital was easy.
	Hospital pharmacists act as a bridge to the prescriber.
	Able to discuss with hospital pharmacists before dispensing
	Able to clarify prescription information and changes, including blister pack information
	Proactive calling approach avoids having community pharmacists call back.
Reduces patient burden	Avoids relying on and overwhelming patient for clarification
	Simplifies consultation with patient
Simplifies process	Simplifies process for patients with multiple medical issues or difficult transitions
Topics of discussion with hospital pharmacists	
Prescription clarification	Changes: discontinued/new/unchanged medications
	Medication name, dose, schedule, duration, quantity, and instructions
	Complicated tapering regimens
	Interval days for controlled drugs
	Missing prescriber information: signature, license #, name
	Patient's time of discharge
Drug coverage clarification	Drug insurance requirements (e.g., authorization codes for products with restricted access)
	Alternatives for medications not covered by drug plan
	Coverage for over-the-counter medications
Drug therapy problems	Potential allergies and drug interactions
	Issues with filling prescriptions at more than 1 pharmacy
	Patient using opioids available without a prescription (i.e., acetaminophen-codeine)
Improvements for future	
Information content	Ensure complete prescription information.
	Shorten discharge summary.
	Improve legibility of fax.
	Ensure faxed information is finalized with minimal changes before discharge.
Timing	Fax prescription earlier.
	Give special consideration for blister packs, need more time to prepare
	Better coordination with weekends and holidays
	Ensure information all faxed before calling
Communication	Ensure contact information is clear.

are supported by research showing the effectiveness of more active "push" techniques for dissemination of information versus passive diffusion approaches (i.e., faxed prescription and/or discharge summary with contact information).[20,21]

An important finding related to discharge summaries is that many community pharmacists reported not receiving them. Contributing factors may have included technical issues with faxing or the discharge summary not being ready when the discharge prescription was sent to the community pharmacy. Because the discharge summary is usually completed by the discharging physician, it may not be complete until well after discharge.[22] The timeliness of discharge summaries has been identified as a quality of care indicator by the participating institution.

Future research exploring the optimal content of a discharge summary for community pharmacists may be warranted. The majority of the pharmacists who received the discharge summary reported it to be useful. Among those who thought otherwise, reasons were that the discharge summary did not fully address all medication changes or technical issues encountered, for example, missing administrative codes required for drug coverage. Some reported that the discharge summary was too long, with an overwhelming amount of information. These are interesting perspectives, because previous literature evaluating the transmission of discharge summaries to pharmacists discusses only the benefits that are seen with the improved communication and does not delve into the disadvantages.[5,6] Our findings suggest an opportunity to explore the contents of an optimal discharge summary for community pharmacists.

Finally, a related issue extending beyond the medical discharge is determining optimal methods for communicating medication changes upon discharge. An Australian study evaluated the implementation of adding a pharmacist-prepared discharge medication management summary for patients with characteristics similar to our study population, showing that general practitioners were satisfied with the information provided and willing to continue receiving the summary in the future.[23] The reported time to complete these documents averaged 11.7 minutes, with a maximum of 25 minutes, and included documentation on various medication changes along with the reasons for change. Other pertinent information, such as adverse drug reaction details and future dosage adjustment requirements, was included at the discretion of the pharmacist.[23] Although the study evaluated physician satisfaction and not pharmacist satisfaction, a pharmacist-prepared discharge medication management summary may be worth considering as an alternate communication method to community pharmacists in future iterations of PROMPT's development and evaluation.

Next phase of PROMPT

A future multimethod study will evaluate the feasibility of implementing the PROMPT program and assess the perceived effectiveness of its various components. An area of focus is determining which pieces of the multicomponent intervention are key contributors to success. The hospital pharmacist telephone call component will be evaluated to determine its perceived impact on continuity of care compared with provision of contact information (along with discharge prescription and summary) for the pharmacist most responsible only. By building on the results and concerns from the work described here, we hope to be able to improve the efficiency and standardization of the PROMPT intervention.

Limitations

This study was originally undertaken with the use of a quality improvement telephone survey containing open-ended questions for which the data were collected by various surveyors. This led to differences in survey administration to community pharmacists, causing potential misinterpretations of the questions. In addition, a number of participants ($n = 11$) were excluded from the analysis owing to the team being unable to follow up or connect or to language barriers that made questions and responses difficult to understand.

The community pharmacists surveyed may be biased to report that the intervention was helpful, to conform to surveyor's expected responses and to prevent surveyors from suspecting that they may have doubts about dispensing any particular prescription. This bias may be augmented by the busy schedules of community pharmacists, who may find it challenging to provide more time generating a meaningful and constructive response.

Given these limitations, future research will ensure a more standardized survey approach. It would be difficult to remove all bias from community pharmacist responses, but setting aside a prearranged time for conducting the survey may minimize the time constraints and ensure more detailed responses.

The undefined inclusion criterion of a "complex" patient may be perceived as another potential shortcoming in our design. However, our study findings confirmed that hospital pharmacists targeted patients for inclusion based on known risk factors for drug therapy problems. This information can be used to shape the inclusion criteria used in future phases of the initiative. Future research could further explore how hospital pharmacists conceptualize patient complexity to explore the role of psychological and social patient factors.

Conclusion

A key strength of this study is its use of an implementation science–guided approach[13] for developing a complex intervention that involved a review of evidence, iterative input from a variety of concerned health professionals, and commitment to using process measures to understand how the intervention worked on a small scale before undertaking a large-scale evaluation focused on clinical or health system outcomes. Overall, PROMPT was a well-received program that improved information sharing between pharmacists practicing in hospitals and in community settings. Community pharmacists described the program as time efficient and a helpful bridge linking them to hospital care, and they suggested opportunities for program enhancement. The next phase of our work is under way.

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Supplemental Appendix A

In addition to the authors, the following individuals contributed to the design of PROMPT.

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Name	Affiliation
Jessica Lam, BScPhm	Clinical Pharmacist, Taddle Creek Family Health Team
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Richard Konop, BScPhm	Pharmacy Owner, Konop Chemists
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Mid-West Toronto Health Link Pharmacy Steering Committee: as above, plus the following.

Name	Affiliation
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Elaine Maloney	Senior Program Analyst, Ontario Public Drug Programs, Ministry of Health and Long-Term Care
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Speros Dorovenis, BSc, PharmD	Pharmacist/Owner, Danforth Neighbourhood Pharmacy Care

Supplemental Appendix B

Telephone Survey Questions

1. Was a copy of the prescription sent to you from the hospital? *Answer options: yes/no/unsure*
2. Did the patient come to your pharmacy to fill his or her prescription after hospital discharge? *Answer options: yes/no/unsure*
3. Was a copy of the discharge summary sent to you from the hospital? *Answer options: yes/no/unsure*
4. If you received the discharge summary as well, was the extra information on the summary useful? *Answer options: yes/no/unsure + why or why not*
5. Did you receive a telephone call from the hospital pharmacist confirming you received those materials and so that you could ask questions? *Answer options: yes/no/unsure*
6. If yes, did someone at your location speak to the hospital pharmacist when he or she called? *Answer options: yes/no/unsure*
7. Did you receive the fax and the telephone call before the patient came in to fill his or her prescription? *Answer options: yes/no/fax only/call only/unsure*
8. Did you call the hospital pharmacist back at any point with questions? *Answer options: yes/no/unsure*
9. If you spoke to a hospital pharmacist over the telephone at any point, if you had questions do you remember the nature of those questions? *Answer options: yes/no/unsure*
10. If you had questions (otherwise not applicable and proceed to next question), were your questions resolved? *Answer options: yes/no/not applicable*
11. This initiative involves hospital pharmacists identifying patients with complex medication needs. With the patient's consent, they then fax the prescription (and discharge summary when possible) to the community pharmacists before calling to either answer questions or leave a number for follow-up. Was this helpful, and would you like to see this kind of communication continue? *Answer options: yes/no/unsure + comment*
12. Is there anything we could have done or could consider doing for improvement? *Answer option: comment*
13. What are common problems you face when you don't get to speak with the hospital pharmacist or have the prescription faxed directly? *Answer option: comment*
14. Additional comments: