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the Translator

Canadian Pharmacy ➤ Research ➤ Health Policy ➤ Practice ➤ Better Health

Pharmacists' Roles on the Pain Management Team

Pharmacists are an important resource for managing pain in their patients, in order to both optimize treatment and prevent the unintended consequences of potent analgesics. While the role of pharmacists in pain management was first addressed in *the Translator* Summer 2012 edition[1], this rapidly evolving area of pharmacy practice has generated a number of innovative models that highlight the unique role of the pharmacist. As Canadian pharmacists embrace expanded scopes of practice, there is an opportunity to specifically leverage their services to assist patients in managing their pain.

This issue of *the Translator* highlights four different approaches to enhanced involvement of pharmacists in the management of chronic pain:

- Pharmacist-led management of chronic pain: a randomized controlled exploratory trial from the UK
- A pharmacist-initiated intervention trial in osteoarthritis
- A pharmacist-led pain consultation for patients with concomitant substance use disorders
- The impact of pharmacists in translating evidence to patients with low back pain

[1] *The Translator*, Summer 2012, 6:3

Pharmacist-led management of chronic pain in primary care: results from a randomized controlled exploratory trial

Bruhn H, Bond CM, Elliott AM, et al. Pharmacist-led management of chronic pain in primary care; results from a randomized controlled exploratory trial. *BMJ Open* 2013;3:e002361.

Issue: In the UK, an estimated 80% of chronic pain sufferers still report pain after four years of follow-up.[1] Most patients refer to primary care providers for pain management, where the mainstay of treatment remains pharmacological therapy with analgesics. Suboptimal prescribing may account for the poor pain control and adverse patient outcomes seen commonly in pain therapy. As medication therapy experts who have a thorough understanding of the polypharmacy regimens involved in chronic pain management, pharmacists prescribing for pain could drastically improve outcomes for chronic non-cancer pain (CNCP) patients. However, there has not yet been a rigorous comparison of the outcomes of non-medical (including pharmacist) prescribing versus treatment as usual provided by the general practitioner (GP).

> Pharmacist prescribing and reviewing pain medication may be effective in improving pain-related outcomes

A solution: The outcomes for patients with chronic pain, managed by one of two pharmacist-led models of care, were compared with standard GP care. Pharmacists in the prescribing arm conducted a paper-based medication review of each patient's medical records, followed by a face-to-face consultation. Patients had completed a pain diary to inform the consultation. Any required prescriptions for medicines were issued by the pharmacist and a treatment plan was agreed upon. In the review arm, pharmacists conducted a paper-based medication review focused on pain-related medications before creating a pharmaceutical care plan that detailed recommendations for medication changes. The plan was passed to the patient's GP for implementation but no prescribing was done by the pharmacist. In the treatment as usual (TAU) arm, patients received standard care from their general practitioner. Outcomes were the physical

The Translator is an initiative by the Canadian Pharmacists Association to support the knowledge translation between pharmacy practice research and health policy. Each issue selects a number of pharmacy practice research articles, briefly summarizes them and discusses the health care policy implications. These articles are submitted by researchers who have a strong desire to support evidence-based health care policy and best practices.

Canadian Pharmacists Association / Association des Pharmaciens du Canada

Pharmacist-led management of chronic pain in primary care: results from a randomized controlled exploratory trial (cont.)

and mental component scores of the SF-12[2] and the Health Utilities Index as primary endpoints, and the overall Chronic Pain Grade[3] (CPG) and the subscales in terms of pain intensity and disability scores and depression and anxiety scores (HADS scale)[4] as secondary endpoints.

After six months, there was significant improvement in overall CPG grade in the prescribing (p=0.003) and review arm (p=0.001) but not in the TAU arm. There were no statistically significant improvements in SF-12 physical component scores (PCSs) other than for the TAU arm, but significant deterioration was also noted in the TAU arm for SF-12 mental component scores (MCSs) (p=0.002) and HADS depression (HADS-D) scores (p=0.03). HADS scores showed a statistically significant improvement within the prescribing arm for both depression (p=0.022) and anxiety (p=0.007). Both were also significant between groups (p=0.022 and p=0.045, respectively).

Implications: This was the first exploratory randomized controlled trial (RCT) to specifically assess pharmacist-led management of chronic pain compared with usual GP care, and the first to assess clinical outcomes of independent pharmacist prescribing compared to medical prescribing. The results suggest that pharmacist prescribing (and possibly pharmacist review alone) may be effective in improving pain-related outcomes and be acceptable to both patients and most professionals. CPG findings showed a graded effect across the three study arms, showing discrimination with both direction and strength of improvement, suggesting maximum benefit for those in the pharmacist prescribing arm. However, based on subscale findings, it is clear that the improvement in overall CPG score was due to improvements in intensity of pain, not pain-related disability. Most patients were within normal range for HADS scores at baseline, but the findings suggest better outcomes at follow-up in the prescribing group. The lack of statistical difference in SF-12 general health scores across arms could mean the intervention had no impact on general health, or that there was insufficient power to detect the effect in this study. Lastly, despite good self-reported adherence to medication at baseline, pharmacists improved pain outcomes in the prescribing arm. If not due to improved adherence, this may have been due to changes in medications and/or participant education about optimal timing for administration of analgesic medicines.

Background or research methods: In the UK, pharmacists can qualify as independent prescribers (similar to having additional prescribing authority in Canada) with the legal authority to prescribe any prescription-only medicine within their perceived areas of competence. There is also a supplementary prescriber qualification, in which pharmacists can prescribe within an agreed clinical management plan in partnership with a doctor and patient (similar to collective prescribing agreements in Quebec). Only independent pharmacist prescribers were eligible to take part in this study. As this was an exploratory pilot trial to inform a subsequent definitive RCT, no formal power calculation was undertaken. Due to the nature of the intervention, participants were not blind to their group allocation.

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Pharmacist-initiated intervention trial in osteoarthritis: A multidisciplinary intervention for knee osteoarthritis

Marra CA, Grubisic M, Cibere J, Grindrod KA, Woolcott, JC, Gastonguay L, Esdaile JM. Cost-Utility Analysis of a Multidisciplinary Strategy to Manage Osteoarthritis of the Knee: Economic Evaluation of a Cluster Randomized Controlled Trial Study. *Arthrit Care Res.* 2014 June; 66 (6): 810-816

Issue: Osteoarthritis (OA), the most frequent form of arthritis, is a degenerative joint disease. It is progressive and irreversible, defined as a loss of articular cartilage coexisting with joint pain and dysfunction.[1] Ten per cent of men and 13% of women over the age of 59 experience symptomatic knee OA,[2] with projections estimating a 50% increase in prevalence over the next 10 to 20 years.[3] As a slowly progressing disease, OA is continuously under-diagnosed and under-treated in North America. Many fail to seek necessary aid, and those who do are repeatedly misdiagnosed or suboptimally managed.[4]

A solution: In the past, multidisciplinary collaboration for chronic disease management has proven to be beneficial.[5] Prior studies demonstrated that pharmacists were successful at identifying previously undiagnosed knee OA,[6] implying knee OA management may improve with pharmacist-led interprofessional collaboration. Between 2007 and 2008, 32 Vancouver community pharmacies enrolled 139 patients with knee pain using passive recruitment methods. Participants and pharmacies were assigned to a control (CG) or an intervention (IG) group. CG pharmacies provided usual care, consisting of a knee OA educational pamphlet from the Arthritis society. IG participants obtained one-on-one pharmacist consultations providing OA education and counselling, medication reviews and referral to an individualized physiotherapist-guided exercise program. Supplement to physiotherapist referral, pharmacists collaborated with patients' primary care physicians by identifying the patient's high probability of having knee OA and supplying medication recommendations.

Patients experience quantifiable benefits from interprofessional collaboration amongst pharmacists, physicians and physiotherapists

Assessment of patients' overall quality of OA care (based on the Arthritis Foundation quality indicators for OA management)[7] was the primary outcome measure. Completed at six months, the pass rate for overall quality indicator was 45.2% higher in the IG compared to the CG (*P<0.0001*), with significantly higher rates for the individual indicators of pain and functional assessment, exercise, education, weight loss and knee radiographs. Secondary measures evaluated function, pain and quality of life using identified assessment tools such as WOMAC, LEFS and HUI3, measured at baseline, three months and six months. The IG showed significant improvements in the WOMAC function and pain scores at three and six months (all *P<0.01*), the HUI3 pain score at baseline, three and six months (all *P<0.05*), as well as the LEFS scores at six months (*P>0.05*).

After evaluating reasons for the pharmacy visits that ultimately lead to patient inclusion in the trial, results showed that 60% were picking up a prescription medication, of which 15% specified a pain relief medication. An additional 16% visited the pharmacy for over-the-counter (OTC) medication, of which 78% specified a pain relief medication. Display cards on pharmacy counters recruited 52% of participants, while a supplemental 38% gained information about the study through posters or shelf talkers within the pharmacy and 15% through pharmacist, pharmacist assistant or technician interaction. As a result of monthly pharmacist-patient follow-ups, a total of 355 documented remarks concerning pain, medication and exercise were given to patients' physicians.

Implications: This is the first study to evaluate multidisciplinary OA management implemented by community pharmacists. With 355 reports communicated to physicians and results demonstrating a 45% improvement of overall OA care quality for the IG, it is evident that patients experience quantifiable benefits from interprofessional collaboration amongst pharmacists, physicians and physiotherapists. Of the participants who visited the pharmacy for OTC products, 78% sought those that provide pain relief, making pharmacists especially essential in identifying undiagnosed knee OA in this patient population. Over half of study participants gained trial information from display cards, suggesting patients are actively involved and interested in improving their health outcomes if given the opportunity. Finally, the monthly patient contact with pharmacists provided proof of benefit for pharmacists' expanded role in collaboration as well as an economical strategy to narrow the gap in OA care.

Background or research methods: Robust and extensive inclusion and exclusion criteria were developed for the study. The WOMAC and LEFS were designed to assess solely the arthritis population whereas HUI3 was developed for use in the general population. No informative differences arose between IG and CG regarding age or sex, however there were some inequalities. To be specific, 71% and 59% reported an income >$50,000/year for IG and CG, respectfully. Furthermore, 86% of the IG and 79% of the CG declared having more than a high school education. Asian population was also larger in the IG (21%) compared to the CG (9%). These slight differences likely contributed to some of the observed outcomes. Pharmacies did not receive financial incentives.

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Pharmacist-led pain consultation service for patients with concomitant substance use disorders.

Andrews LB, Bridgeman MB, Dalal KS, Abazia D, Lau C, Goldsmith DF and St John D. *Implementation of a pharmacist-driven pain management consultation service for hospitalised adults with a history of substance abuse. Int J Clin Pract.* 2013 Dec; 67 (12): 1342-9.

Issue: Being an urban hospital in Trenton, New Jersey, Capital Health Regional Medication Centre's (CHRMC) patient population has a high incidence of substance use disorders (SUDs). The nurses at CHRMC's medical-surgical units were often intimidated by patients' demands for additional pain medication. Some health care professionals (HCPs) are ill-prepared to distinguish true pain symptoms from drug-seeking behaviour. Such manipulative behaviour can also be observed in patients with pseudoaddictions, where their request for prescription medications is genuinely for pain relief.[1] Thus, HCPs face the threat of legal action taken by patients if their pain control needs are not met.

A solution: Equipped with pharmacokinetic and pharmacodynamic knowledge, clinical pharmacists can play a critical role in guiding pharmacotherapy to minimize drug abuse and optimize pain control. Since 2006, pharmacists at CHRMC have collaborated closely with physicians and nurses in an interprofessional environment to manage pain by optimizing opioid therapy and using non-opioid options (e.g., NSAIDs, tramadol, muscle relaxants and anxiolytics). To promote confidence in pain management, clinical pharmacists conducted multidisciplinary continuing education sessions (e.g., use of buprenorphine and naloxone, transitioning patients to outpatient opioid addiction treatment) especially targeting physician residents and nurses. As part of the strategy to detect manipulative behaviour, patients' physical capacity and overall behaviour (e.g., vital signs, meal consumption, level of mobility and request to smoke outside) were taken into consideration when assessing their self-reported pain scores. Upon detection of continued manipulation, the physician and nurse would accompany the pharmacist in providing the patient with a rationale for their pain management approach.

Pharmacists' involvement in the co-management of acute pain and SUD improves patient safety and pain control

To ensure consistency amongst members of the Clinical Pharmacy Consult Service (CPCS) team, a pain management strategy was established. If the patient could tolerate oral administration, oral analgesic pharmacotherapy was used with a preference for non-opioid alternatives when appropriate. This approach was intended to reduce intravenous (IV) opioid use and euphoria associated with large IV boluses.[2] However, if IV opioids were necessary, the administration method of choice was via a patient-controlled analgesia (PCA) pump. This method has been proven to be effective in pain control and promote patient safety by reducing total drug exposure. After careful review of current literature, pain protocols and the American Pain Society's recommendations, the CPCS team created and disseminated a peer-reviewed PCA pocket card. This reference card provided physicians and pharmacists with PCA activation instructions, opioid equianalgesic dosing between different agents (e.g., morphine to oxycodone) and conversion strategies between various dosage forms (e.g., oral to topical).

In the initial pilot month, intermittent IV opioid administration was switched to PCA dosing for 15 patients. During this transition, seven of these patients displayed threatening behaviour while two were found tampering with their PCA device. At the end of the three-month pilot program, the use of intermittent IV opioid dosing decreased significantly. Between baseline and pilot conclusion, there was a 25% and 42% reduction in the intermittent use of morphine and hydromorphone, respectively. Subsequently, team members also noticed a corresponding decline in disruptive and intimidating behaviour. Upon surveying the nursing and physician staff on their impression of this program, they expressed that pharmacists helped increase their confidence in managing acute pain with SUDs and promote cohesiveness amongst team members.

Implications: Due to the subjective nature of pain and lack of objective metrics, the management of pain in adults with a history of substance abuse is a highly complex task. By implementing a standardized and systematic approach in pain medication selection and dosing, pharmacists have helped decrease intermittent IV opioid administration and modified the drug seeking behaviour of patients. Pharmacists' involvement in the co-management of acute pain and SUD not only improved patient safety and pain control, but also increased knowledge and confidence of physicians and nurses.

Background or research methods: CHRMC licensed independent practitioners and clinical pharmacists initiated a formal consultation via paper/electronic forms, hotline or direct contact with the assigned pain pharmacist for patients meeting specific requirements. This included patients who were prescribed >8 mg of hydromorphone or 25 mg of morphine IV daily, or those who were only on intermittent doses of hydromorphone or morphine with inadequate pain control. Once the pain treatment plan was reviewed and approved by the physician, the recommended regimens were processed as verbal medication orders. All pain regimens were designed to reduce patients' pain score to <4/10.

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Translating evidence for low back pain management into a consumer-focussed resource for use in community pharmacies: a cluster-randomised controlled trial

Slater H, Briggs AM, Watkins K, Chua J, Smith AJ (2013) *Translating evidence for low back pain management into a consumer-focussed resource for use in community pharmacies: a cluster-randomised controlled trial.* PLoS ONE 8(8): e71918. doi:10.1371/journal.pone.0071918

Issue: Persistent low back pain (LBP) continues to present a complex and challenging problem for consumers in Australia and globally.[1] The escalating costs of health services directed at arresting the health and economic burden associated with LBP syndromes are unsustainable[2], and there is an urgent need to reconsider how LBP is managed in primary care settings. One strategy for improvement focuses on making patients more active participants in their own pain co-care. To accomplish this, consumers need reliable, accessible and understandable health information, particularly at the community level.[2,3] There is, however, currently a gap in knowledge about what constitutes feasible and effective primary care implementation of reliable consumer information regarding LBP, which must be addressed.

A solution: A cluster-randomized controlled trial (C-RCT) was conducted to determine the effectiveness of: (i) a consumer LBP pamphlet compared to usual pharmacy care in improving LBP-related beliefs among community pharmacy consumers with LBP, and (ii) delivering a pamphlet with and without additional verbal reinforcement of the pamphlet key messages by pharmacists. Pharmacies (clusters) were randomized into three groups: 1) patients who would receive treatment as usual (control group), 2) patients who would receive a LBP information pamphlet with additional verbal counselling to reinforce key messages (intervention group 1), 3) patients who would receive a LBP information pamphlet without additional verbal counselling (intervention group 2).

Primary individual-level outcomes were captured at pre-intervention (T0), at two (T1) and eight (T2) weeks post-intervention and included mean effects of intervention on back beliefs and fear avoidance beliefs (related to work or physical activity). Conditioning for baseline scores demonstrated no significant differences in back pain beliefs between either intervention group, or when comparing intervention groups to control at two or at eight weeks. However, after adjusting for baseline scores, work-related fear avoidance (FABQ) was significantly lower in consumers receiving the pamphlet (with or without education) intervention compared with control at eight weeks. There was no significant difference between 'pamphlet-with' versus pamphlet-without' groups.

Secondary outcomes showed no significant differences in pain severity at two or eight weeks between pamphlet versus control, or between pamphlet with versus without education. There was also no significant difference in disability between pamphlet versus control, or between pamphlet with versus without education.

In terms of pamphlet usefulness rated on a global perceived impression of usefulness (GPIU) scale, pharmacists rated both the pamphlet as useful (using an 11 point NRS anchored at 0, not at all useful, and 10, extremely useful): GPIU mean of 7.1 (with education) and mean of 7.4 without education), as did consumers (GPIU mean of 6.2 at two weeks and mean of 5.7 at eight weeks for pamphlet with education) while those receiving the pamphlet only reported lower mean GPIU of 5.3 and 4.9 at the same time points respectively.

Implications: The use of community pharmacies as a primary care portal for the implementation of evidence-based information to consumers with LBP is feasible, as communicated by pharmacists involved in the intervention, and the pamphlet succeeded in improving consumers' work-related fears about LBP at eight weeks. While the effect size of this change was small, and it is unclear how this primary outcome might impact any longer term work-related disability, it does highlight that the use of a relatively inexpensive evidence-based pamphlet to help improve work-related fear avoidance beliefs, appears to be a simple and positive component of a health intervention for consumers with LBP. It is clear that patients want written information tailored for their needs, but do not want it to substitute spoken counselling. Going forward, the three elements of health literacy (seeking, understanding and doing) must be considered when attempting to involve patients in co-care. Beliefs and behaviours for consumers with persistent LBP do not necessarily match[3] and, in particular, sufferers of LBP have been found to have more trouble engaging in positive lifestyle behaviours. Investigation into how pharmacists can support such simple educational initiatives and work with consumers and other health professionals to drive effective change in management of LBP in primary care is warranted.

Background or research methods: The pamphlet used in this study provided evidence-based information about management for LBP (consistent with current recommendations)[4] by highlighting key messages for consumers, such as the need to stay active, stay positive and stay engaged. Outcome measures for patient beliefs included the Back Pain Beliefs Questionnaire[5] (BBQ), for beliefs about inevitable consequences of future life with lower back pain, and the Fear Avoidance Beliefs Questionnaire[6] (FABQ) for avoidance beliefs and attitudes (including two subscales: PA, for physical activity, and W, for work). The perceived usefulness of the pamphlet was scored using a GPIU[7].

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