

Prescription opioid use and misuse

Piloting an educational strategy for rural primary care physicians

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Abstract

Objective To evaluate the feasibility and effectiveness of a multifaceted educational intervention to improve the opioid prescribing practices of rural family physicians in a remote First Nations community.

Design Prospective cohort study.

Setting Sioux Lookout, Ont.

Participants Family physicians.

Interventions Eighteen family physicians participated in a 1-year study of a series of educational interventions on safe opioid prescribing. Interventions included a main workshop with a lecture and interactive case discussions, an online chat room, video case conferencing, and consultant support.

Main outcome measures Responses to questionnaires at baseline and after 1 year on knowledge, attitudes, and practices related to opioid prescribing.

Results The main workshop was feasible and was well received by primary care physicians in remote communities. At 1 year, physicians were less concerned about getting patients addicted to opioids and more comfortable with opioid dosing.

Conclusion Multifaceted education and consultant support might play an important role in improving family physician comfort with opioid prescribing, and could improve the treatment of chronic pain while minimizing the risk of addiction.

EDITOR'S KEY POINTS

- Many family physicians struggle to balance the need to treat chronic pain with the challenges and risks of prescribing opioids. Prescription opioid misuse in aboriginal communities is a particular growing concern, and safe opioid prescribing is a challenge for physicians working in remote communities where there is limited access to pain clinics and addiction treatment.
- The authors developed the educational intervention described in this article in response to a request from physicians practising in a remote First Nations community for continuing education support to optimize prescribing practices and learn treatment strategies.
- Most responses to the follow-up survey did not differ significantly from baseline responses, although physicians were less concerned about getting patients addicted to opioids than they had initially been, and they had less difficulty with dosing decisions.
- All of the physicians who participated in follow-up telephone interviews said that the most useful parts of the educational initiative were the workshop, the tool kit of office materials, and the chance to speak with an expert about their cases during the follow-up interviews. Most physicians reported that after the educational intervention they had started using or increased their use of treatment agreements and that they had increased or started urine drug screening, which can make opioid treatment safer.

This article has been peer reviewed.
Can Fam Physician 2012;58:e210-6

Bonne et mauvaise façon de prescrire des opiacés

Évaluation d'une stratégie pédagogique à l'intention des médecins ruraux de première ligne

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Résumé

Objectif Évaluer la faisabilité et l'efficacité d'une intervention pédagogique multifacette destinée à améliorer la prescription d'opiacés par des médecins de famille ruraux pratiquant dans une communauté reculée des Premières nations.

Type d'étude Étude de cohorte prospective.

Contexte Sioux Lookout, Ont.

Participants Des médecins de famille.

Interventions Dix-huit médecins de famille ont participé à une étude sur une année portant sur une série d'interventions pédagogiques concernant la façon sécuritaire de prescrire des opiacés. Ces interventions incluaient un atelier principal avec un cours théorique et des discussions de cas interactives, une pièce pour des échanges en ligne, des conférences téléphoniques sur des vidéos de cas et le support de consultants.

Principaux paramètres à l'étude Réponses au début de l'étude et après 1 an à des questionnaires sur les connaissances, attitudes et façons de faire relativement à la prescription d'opiacés.

Résultats L'atelier principal était réalisable et a été apprécié par les médecins de première ligne des communautés éloignées. Au bout d'un an, les médecins étaient moins craintifs de causer une dépendance aux opiacés chez leurs patients et plus à l'aise avec le choix des doses.

Conclusion Une formation multifacette et un support de la part de consultants pourraient être importants pour faire en sorte que les médecins soient plus à l'aise avec la prescription d'opiacés et pour améliorer le traitement de la douleur chronique, tout en minimisant le risque de dépendance.

POINTS DE REPÈRE DU RÉDACTEUR

- Plusieurs médecins de famille ont du mal à trouver un équilibre entre le besoin de traiter la douleur chronique, et le défi et les risques associés à la prescription d'opiacés. Les prescriptions inadéquates d'opiacés dans les collectivités autochtones sont de plus en plus préoccupantes tandis que la façon sécuritaire de les prescrire est un défi pour les médecins qui travaillent dans des collectivités éloignées ayant un accès limité aux cliniques de la douleur et au traitement de la dépendance.

- Les auteurs ont élaboré les interventions pédagogiques décrites dans cet article en réponse aux demandes de médecins pratiquant dans une collectivité reculée des Premières nations pour obtenir de la formation continue afin d'optimiser leur façon de prescrire et d'apprendre des stratégies de traitement.

- La plupart des réponses à l'enquête de suivi ne différaient pas significativement des réponses initiales, quoique les médecins étaient moins préoccupés qu'au début de rendre les patients dépendants aux opiacés et qu'ils avaient moins de difficulté dans le choix des doses.

- Tous les médecins qui ont participé aux entrevues téléphoniques de suivi ont dit que les éléments les plus utiles de cette initiative pédagogique étaient l'atelier, la trousse de documents pour le bureau et la chance d'échanger avec un expert sur leurs cas durant les entrevues de suivi. La plupart ont déclaré qu'à la suite de l'intervention pédagogique, ils avaient commencé ou augmenté leur utilisation des ententes de traitement de même que le dépistage urinaire des drogues, ce qui rend le traitement aux opiacés plus sécuritaire.

Cet article a fait l'objet d'une révision par des pairs.
Can Fam Physician 2012;58:e210-6

Opioid prescribing can be a challenging area of family practice, as it requires balancing the need to treat chronic pain against the risk of misuse and abuse.

A national survey found that up to 35% of primary care physicians would never prescribe opioids for moderate to severe chronic pain; 37% identified the risk of addiction as a major barrier to their prescribing opioids.¹ In addition to being concerned about the risk of addiction, physicians are also uncertain about the indications for opioids.²

However, despite these concerns, more opioid prescriptions are being written. In Ontario, opioid prescriptions increased between 1991 and 2004, and in that time period, opioid-related deaths doubled.³ Moreover, there is evidence of strong associations between opioid dose and opioid-related mortality.⁴

In many cases, opioid overdose could have been prevented through more careful physician prescribing and greater physician and patient education.⁵ Many patients addicted to prescription opioids receive them directly from physicians,⁶ and even when they are not prescribing the opioids themselves, physicians frequently see illicit opioid users,⁷ suggesting that improved physician recognition of addiction could help patients.

Prescription opioid use in aboriginal communities is a growing concern, with relatively more codeine prescriptions dispensed in these communities than among the Canadian general population,⁸ and with 45% of aboriginal patients who have sought addiction treatment services reporting inappropriate use of prescription opioids or analgesics.⁹ The medications were obtained from friends or strangers (52%), bought on the street (45%), or prescribed by physicians (41%). Results of the 2003 Aboriginal People's Survey demonstrate a growing concern about the prevalence of illegal and prescription narcotic misuse within reserve aboriginal communities.¹⁰

The Sioux Lookout Zone Physicians (SLZP), practising in a rural and remote First Nations community, expressed concern about the use of prescription opioids in their community and requested physician education to optimize prescribing practices and learn treatment strategies.

We thus developed an educational intervention employing strategies of proven effectiveness, including skills-based presentations,¹¹⁻¹³ a tool kit of office system materials, an interactive video case conference, a clinical support service,^{14,15} an e-mail support group, and follow-up videoconferencing.¹⁶⁻¹⁹ Multifaceted interventions were used, as they are more likely to be effective than unitary approaches.²⁰

As opioid addiction treatment can be effectively prescribed by primary care physicians,²¹⁻²⁴ we also included education on opioid agonist treatment.

The clinical content of the project was consistent with recent systematic reviews and evidence-based guidelines. The prescribing of opioids for pain and the management of addiction were both addressed. The educational intervention strived to maintain a balanced approach toward opioids, viewing them as important therapeutic tools with potentially serious consequences if prescribed improperly. The goal was to ensure that physicians were skilled in opioid prescribing and in the early identification of patients with opioid dependence.

METHODS

Concerns about opioid prescribing in this physician community were identified by one of the authors (A.J.), who was also a member of the SLZP. A didactic lecture and case studies were planned accordingly by 2 of the authors (A.S. and M.K.). The study was granted ethics approval by the Research Ethics Board of St Joseph's Health Centre in Toronto, Ont. Family physicians from the SLZP were invited to participate in the study. The initial educational workshop included a didactic lecture and a case-based small group discussion focused on the key learning objectives (Box 1).

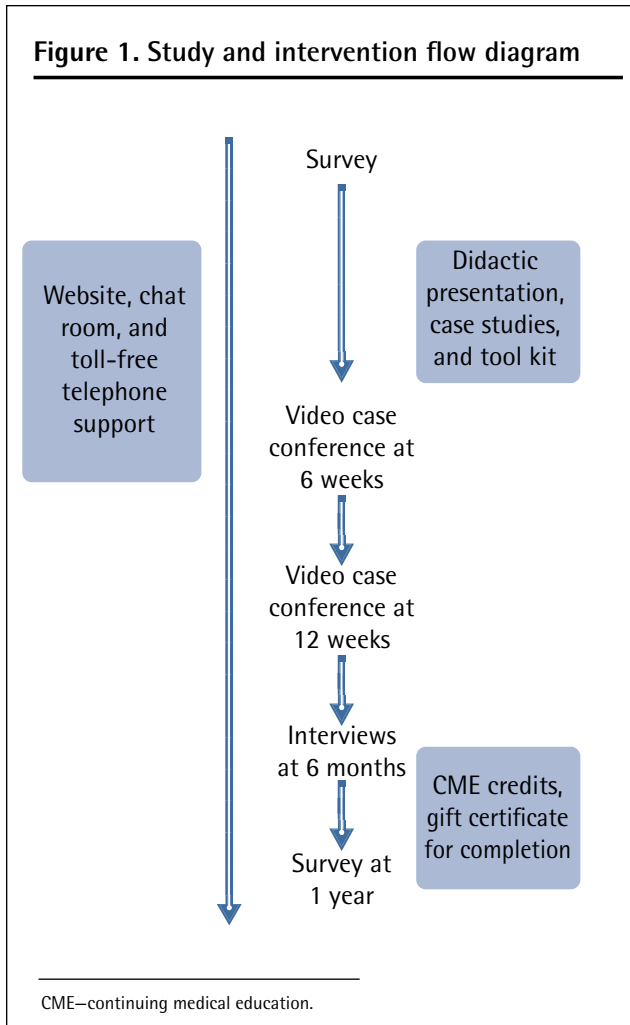
Box 1. Initial educational workshop outline

Key learning objectives of the initial educational session included the following:

- safe opioid prescribing techniques, including the evaluation of chronic pain, starting and maintenance doses, and monitoring for evidence of misuse and dependence;
- developing treatment agreements with patients;
- use of urine drug screening to help in patient advocacy, monitoring, harm-reduction counseling, and treatment strategies;
- use of provincial resources including counseling and treatment programs; and
- provision of educational materials to patients on harm-reduction strategies and knowledge surrounding opioid abuse and health consequences, such as hepatitis C and safer injection.

Knowledge, concerns, and practices surrounding opioid prescribing were assessed by a questionnaire (at baseline and 1-year follow-up) and by telephone interviews at 6 months (Figure 1). The baseline questionnaire was administered before the initial workshop, and the 1-year follow-up questionnaire was identical. The questionnaire asked the physicians to rate their confidence, comfort, satisfaction, and expectations of a positive outcome when prescribing opioids for chronic pain, using Likert scales. The questions were adapted

Figure 1. Study and intervention flow diagram



from similar questions frequently used in surveys about physicians' attitudes and practices with respect to opioid prescribing.²⁵⁻³¹

The initial workshop was accompanied by an interactive video case conference at 1 month and 3 months, a direct clinical support system, a website on opioid prescribing, and pocket cards in both paper and electronic format (**Box 2**).

Results of the survey were analyzed using PASW Statistics, version 18.0. Paired data were analyzed using *t* tests, individually as well as in clustered groups by theme. Telephone interviews were performed, recorded, transcribed, and analyzed for common themes by 2 of the study authors (A.S. and M.K.).

RESULTS

Survey results

Eighteen of the 20 (90%) SLZP physicians present at the workshop consented to participate in the study and completed the baseline survey. Thirteen physicians

Box 2. Tool kit components

The following tool kit components were provided to study participants in paper, electronic, and "pocket card" formats:

- clinical protocols for opioid prescribing (including indications, precautions, choice of opioid), dosage titration, and maximum doses;
- screening instruments for substance abuse (laboratory tests) and indications for and interpretation of urine drug screening and contingency management;
- treatment agreements between physicians and patients for prescribing;
- tools to help with office visits (narcotic flow sheets, sheets for charting initial and follow-up visits);
- clinical indicators of opioid dependence;
- protocols for therapeutic opioid trial;
- Ontario treatment referral services and resources;
- contact information for support team, including e-mail and telephone contact information;
- role of methadone and buprenorphine in opioid-dependence treatment; and
- patient educational handouts on hepatitis C, safer injection drug use, opioid dependence, overdose, withdrawal, treatment resources, and counseling services.

(65%) completed and returned the follow-up survey at 1 year. There was no statistically significant difference in age, previous attendance at educational events, population of practice, or location or size of individual practices among the physicians who completed the study and those who completed only the baseline survey. All participating physicians were general or family practitioners and more than 70% practised in communities of 10 000 or fewer inhabitants. In the past 3 months, 67% had prescribed opioids for chronic pain (**Tables 1 and 2**).

Common aberrant patient behaviour. When asked about patients taking prescription opioids who had outwardly displayed negative behaviour, the most frequently identified behaviour was "running out of opioids early," "arriving as a 'walk-in' for opioid prescription," and "missing appointments."

Attitudes toward opioid prescribing. At baseline, most respondents reported that they were "somewhat comfortable" with and "somewhat confident" in their clinical skills to prescribe opioids for chronic pain. At 1 year, these physicians appeared to be even more comfortable and confident in these clinical skills, but this improvement was not statistically significant.

Concerns surrounding opioid prescriptions for chronic pain. Respondents reported being highly concerned about the lack of pain clinics and addiction

treatment resources, about having difficulty deciding if patients needed opioids, and about getting patients addicted. One year after the workshop, the level of concern about the lack of pain clinics and addiction treatment resources remained the same. There were no statistically significant differences in the degree to which physicians had difficulty deciding if patients needed opioids, had difficulty choosing the right opioids, and had difficulty in titrating the dose. However, the level of concern about getting patients addicted decreased significantly ($P=.028$). The aggregate score for difficulties with dosing also decreased ($P=.041$).

Table 1. Demographic characteristics of physician participants: $N = 18$.

CHARACTERISTICS	N (%)
Sex	
• Male	8 (44.4)
• Female	10 (55.6)
Age, y	
• <30	3 (16.7)
• 30-39	3 (16.7)
• 40-49	7 (38.9)
• 50-59	5 (27.8)
• > 59	0
Medical specialty	
• General or family practice	18 (100.0)
• Specialist	0
• Emergency department	0
Population size	
• <5000	5 (27.8)
• 5000-10 000	8 (44.4)
• 11 000-30 000	4 (22.2)
• 31 000-60 000	0
• > 60 000	1 (5.6)

Table 2. Avenues of previous education on opioid prescribing before the initial workshop

PREVIOUS OPIOID EDUCATION	N (%)
Attended previous educational events	
• No	9 (50.0)
• Yes	9 (50.0)
Lecture or workshop at hospital or clinic rounds	4 (22.2)
Pharmaceutical-sponsored dinner, workshop, or publication	1 (5.6)
Article in journal	4 (22.2)
Other	2 (11.1)

Knowledge. To test knowledge about opioid prescribing, physicians were asked to select the best course of treatment for a series of case vignettes. There were no differences in the answers and scores at 1 year after the intervention.

Interview results

Individual and small group interviews (45 minutes long) were conducted with the participating physicians at 6 months after the initial educational intervention. In total, 12 physicians were interviewed; 6 of the interviews were individual sessions.

The interviews were conducted by the author (A.S.) who had delivered the workshop and video case conferences and with whom the participants had already developed a professional relationship. The telephone discussions were opportunities for participants to share cases and obtain feedback. They were also semistructured interviews on perceptions and challenges in opioid prescribing, and on how the educational intervention had affected participants' practice and how it could have been improved.

Interventions. Most of the physicians found the main workshop with didactic lecture and case discussions helpful and enjoyable, but would have liked even more case discussions. Several said that the lecture helped them to understand the appropriate sequence for starting pain medications and to recognize misuse behaviour.

Some physicians said they found it useful having the consultant's e-mail, but almost all could not remember the number for the addiction consultation service and said that the online chat room was not helpful for them, as they worked in remote communities with limited Internet access.

Change in practice. Most physicians reported that after the educational intervention they had started using or increased their use of treatment agreements and that they had increased or started urine drug screening. However, physicians were anxious about interpreting the results and a few expressed interest in obtaining point-of-care testing kits.

Physicians also reported that they were more aware of the addiction potential of oxycodone products and had started titrating with lower-potency opioids such as codeine-acetaminophen combinations for chronic pain. It was also reported that sharing care of patients among group physicians was easier because everyone had attended the main workshop and "was on the same page."

Change in use of practice tools. Most physicians were also using the printed or electronic (which was compatible with mobile devices) pocket guide that had been provided as part of the tool kit, as it was easy to

take with them when traveling to remote communities. Treatment agreements were being used much more regularly by almost all of the physicians.

Common themes. Other common themes emerging from the interviews included ongoing concern about prescribing opioids for chronic pain and the stress around the responsibility that the physicians felt for managing opioid abuse. The participants believed that they had a greater responsibility to treat opioid abuse than alcohol abuse because they had the power to prescribe these medications and knew that they could end up on the street or, in some cases, with family members. A common theme was anxiety over diversion of prescribed opioids contributing to the community's rising problem of prescription opioid addiction. Several physicians said that large families lived in small spaces and that sharing and stealing of pain medications was common.

Another common theme that emerged was physician uncertainty about whether requests for opioids indicated undertreatment of chronic pain or inappropriately escalating usage. Almost all of the physicians expressed concern about treating chronic pain in patients who had been taking large amounts of opioids for a long period of time, and those who might have had some misuse or abuse but who also had chronic pain.

Feasibility results

This study was undertaken as a pilot study to assess whether such an educational intervention would be feasible in a remote medical community that was dealing with rising rates of opioid addiction.

The initial workshop was well attended and well received. The video case conferences were poorly attended. The website and online chat room were used minimally. Most physicians made an effort to attend the telephone interview, which was also an opportunity for them to receive consultant support and to discuss their challenging cases.

At the follow-up interviews, all of the physicians indicated that they found the workshop very helpful and that they appreciated having e-mail and telephone contact information for an expert in the area.

All of the physicians who participated in the follow-up telephone interviews said that the most useful parts of the educational initiative were the workshop, the tool kit of office materials, and the chance to speak with an expert about their cases during the follow-up interviews.

DISCUSSION


This study developed and pilot-tested an educational intervention in the form of a tool kit and workshop targeted to smaller, remote communities. There was

evidence of reduced physician concerns around opioid prescribing, particularly with respect to dosing and addiction. The intervention was feasible, well received, and considered important and useful by the rural family physician participants. The physicians indicated at their interviews that they enjoyed having the main workshop and the opportunity to discuss their cases. However, the video case conferences and chat room were poorly attended. Physicians indicated that they were busy flying into very small remote communities where there was limited connectivity and that their practice schedules and style did not work well with chat rooms or videoconferences. However, the scheduled workshop at their annual physician retreat and the scheduled interviews worked well for their style of practice, as did the tool kits, which they could carry on their mobile devices. Future interventions could include a main workshop with more case discussion, office tool kits and support materials available in mobile-friendly formats, and opportunities for physicians to have scheduled group or individual discussions with consultants. Scheduled interventions that aligned with the physicians' regular annual meeting (the main workshop) and that had incentives (gift certificate for participating in the interview) and reminder calls beforehand were the best attended. Video case conferences and chat rooms that were not formally incorporated into the physicians' schedules and that did not have reminder calls or any incentives were poorly attended and used.

Even with a small sample size, there was a significant reduction in physician concerns about getting patients addicted and fewer dosing concerns at 1 year. One of the limitations of this study is that direct practice changes were not assessed by chart review; however, the in-depth interviews with the physicians confirmed that practice changes had occurred and that safer opioid prescribing practices, such as the use of treatment agreements and urine drug screening, were being implemented 6 months after the workshop. Most important, the physicians reported being more satisfied with this area of practice.

Safe opioid prescribing is a considerable concern for primary care physicians, particularly for physicians working in remote First Nations communities where rates of addiction are high and where there is limited access to pain clinics and addiction treatment. As many opioid-addicted patients receive their opioids from their physicians or will likely have interactions with their physicians, physicians need and want education in this challenging area of practice. This educational intervention is a practical solution that might help reduce physician anxiety about prescribing opioids while improving the treatment of chronic pain and limiting the risk of addiction.

Conclusion

Our pilot educational intervention on safe opioid prescribing was well received and feasible for primary care physicians in remote communities and was, overall, effective in reducing physician concerns about dosing and addiction. Future studies measuring direct practice changes are necessary to confirm that a multifaceted educational intervention also has an important role in making the treatment of chronic pain safer. 

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Acknowledgment

This study was supported by a Janus scholarship through the Research and Education Foundation of the College of Family Physicians of Canada.

Competing interests

Drs Srivastava and **Kahan** received honoraria from Reckitt Benckiser for an unrelated project.

Contributors

All the authors contributed to the concept of the study, and to data analysis and preparing the manuscript for submission. **Drs Srivastava** and **Kahan** created the educational intervention, and **Dr Srivastava** conducted the initial workshop and follow-up interviews.

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