Emergency physicians' attitudes and perceived barriers to the implementation of take-home naloxone programs in Canadian emergency departments

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ABSTRACT

Objectives: Rates of opioid-related deaths have reached the level of national public health crisis in Canada. Community-based opioid overdose education and naloxone distribution (OEND) programs distribute naloxone to people at risk, and the emergency department (ED) may be an underutilized setting to deliver naloxone to these people. The goal of this study was to identify Canadian emergency physicians' attitudes and perceived barriers to the implementation of take-home naloxone programs.

Methods: This was an anonymous Web-based survey of members of the Canadian Association of Emergency Physicians. Survey questions were developed by the research team and piloted for face validity and clarity. Two reminder emails were sent to non-responders at 2-week intervals. Respondent demographics were collected, and Likert scales were used to assess attitudes and barriers to the prescription of naloxone from the ED.

Results: A total of 459 physicians responded. The majority of respondents were male (64%), worked in urban tertiary centres (58.3%), and lived in Ontario (50.6%). Overall, attitudes to OEND were strongly positive; 86% identified a willingness to prescribe naloxone from the ED. Perceived barriers included support for patient education (57%), access to follow-up (44%), and inadequate time (37%). In addition to people at risk of overdose, 77% of respondents identified that friends and family members may also benefit.

Conclusions: Canadian emergency physicians are willing to distribute take-home naloxone, but thoughtful systems are required to facilitate opioid OEND implementation. These data will inform the development of these programs, with emphasis on multidisciplinary training and education.

RÉSUMÉ

Introduction: La mortalité liée à la prise d'opioïdes au Canada a pris une telle ampleur qu'elle est devenue une crise nationale en matière de santé publique. Les programmes communautaires d'enseignement sur les surdoses d'opioïdes et de distribution de naloxone rendent possible la remise de ce médicament aux personnes à risque, et le service des urgences (SU) serait un lieu sous-utilisé de distribution de naloxone aux personnes concernées. L'étude avait donc pour but de cerner les attitudes des médecins d'urgence au Canada à l'égard des programmes de distribution de naloxone ainsi que la perception des obstacles possibles à leur mise en œuvre.

Méthode: Il s'agit d'une enquête anonyme, menée sur le Web parmi les membres de l'Association canadienne des médecins d'urgence. L'équipe de recherche a travaillé à l'élaboration des questions, puis a vérifié la validité apparente et la clarté du questionnaire. Deux rappels ont été envoyés par courriel aux non-répondants, à deux semaines d'intervalle. Il y a eu collecte de données démographiques sur les répondants, et les attitudes des urgentologues à l'égard de la prescription de naloxone à partir des SU ainsi que les obstacles à cette nouvelle pratique ont été évalués à l'aide d'échelles de Likert.

Résultats: Au total, 459 médecins ont répondu à l'enquête. La majorité d'entre eux étaient des hommes (64 %), travaillaient dans des centres de soins tertiaires en milieu urbain (58,3 %) et demeuraient en Ontario (50,6 %). Les répondants se sont montrés, en général, grandement favorables à l'égard de ces programmes : en effet, 86 % étaient disposés à prescrire de la naloxone à partir du SU. Toutefois, les obstacles perçus à la mise en œuvre de ces programmes comprenaient le manque de soutien pour l'enseignement aux patients (57 %), la difficulté du suivi (44 %) et le manque de temps (37 %). Par ailleurs, 77 % des répondants ont indiqué que, outre les personnes susceptibles de subir une surdose, les parents et les amis pouvaient profiter de ces programmes.

Conclusions: Les médecins d'urgence au Canada se montrent disposés à distribuer de la naloxone pour usage ultérieur, mais,

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pour ce faire, il faut mettre en place des systèmes bien conçus afin de faciliter l'enseignement sur les surdoses d'opioïdes et la distribution de naloxone. Les données recueillies aideront à l'élaboration de ces programmes, accompagnés d'un volet important de formation et d'enseignement multidisciplinaires.

Keywords: emergency department, naloxone, opioids

INTRODUCTION

Unintentional overdose has become the leading cause of injury-related death among Americans ages 25 to 64 years.[1] A comparable epidemic is under way in Canada,[2] with opioid misuse now the third-leading cause of accidental death in Ontario.[3,4] The World Health Organization has recommended the use of naloxone by lay responders for treatment of overdose,[5] and it has recently been added to the 2015 American Heart Association (AHA) guidelines for cardiac arrest.[6] Health Canada recently removed the drug from the Prescription Drug List to increase access, making it available in Canadian pharmacies without a prescription.[7]

Community-based opioid overdose prevention and naloxone distribution programs have been operational in the United States and Europe since the mid-1990s but are still relatively novel in Canada. These programs involve training people at risk of opioid overdose and their friends and family members with the skills to identify overdose situations, activate emergency medical services, and provide basic life support interventions, including the administration of intramuscular or intranasal naloxone.[8,9] Program participants are provided with a naloxone kit containing the program's training protocol, naloxone, and delivery devices. These programs have had success through overdose education and distribution of naloxone kits in several major Canadian cities,[10-12] with several community reversals of opioid overdoses reported and no adverse effects. The World Health Organization, U.S. Centers for Disease Control and Prevention, and the U.S. Society of Toxicology have all advanced statements supporting these interventions and calling for wider access to these programs.[13-15]

Due to the high rate of drug-related visits,[16] recurrent opioid prescribing, and routine encounters with opioid overdose patients,[17] the emergency department (ED) may represent an underutilized setting to identify patients at risk of opioid overdose and to distribute naloxone.

To expand outpatient overdose education and naloxone distribution (OEND) programs from the ED, physicians' attitudes toward the programs and willingness to participate need to be evaluated. The objective of our study was to identify Canadian emergency physicians' attitudes and perceived barriers to the implementation of take-home naloxone programs.

METHODS

Study design and population

We conducted a self-administered, anonymous, and confidential Web-based survey of emergency medicine (EM) resident and attending physician members of the Canadian Association of Emergency Physicians (CAEP). A total of 1,658 physicians consented to receive surveys from the organization and were emailed a link to the survey using the Survey Monkey platform.[18] Participation was voluntary. CAEP physicians not practicing EM or who were not members of CAEP were excluded.

Survey content and administration

Fourteen survey questions (see Supplementary Material) were developed by the research team and piloted amongst a group of emergency physicians for face validity and clarity prior to distribution.[19] We constructed the initial survey questions based on expert opinion and review of the evidence.[20-22] We then conducted cognitive interviews with practicing emergency physicians, where the physicians responded to the survey. During this assessment, they were asked to vocalize anything that they felt was either unclear, uncomfortable, or any other thoughts they might have. Body language was observed as well, and physicians were questioned about what they were thinking if they appeared to be perplexed or uncomfortable. The final survey tool also included basic demographic information such as gender, EM certifications, years of experience, and practice setting. After the initial email distribution, two further electronic reminders were sent according to a modified Dillman method.[23] All survey responses were collected electronically and

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anonymously. As an incentive, participants were invited to enter their email on a separate website upon survey completion for a chance to win a $250 gift certificate. The Ottawa Health Science Network Research Ethics Board approved this study.

Data analysis

Frequencies and means were calculated for each survey question, and a cross-tabulation chi-square analysis was performed for association of knowledge and barriers with the demographic information collected. All responses were used in the analysis.

RESULTS

A total of 459 physicians responded to the survey (response rate was 27.7%). Respondents are mostly male (63.9%), work in an urban tertiary centre (58.3%), and have a Certification in the College of Family Physicians (CCFP) EM designation (44.9%; Table 1). The majority of respondents reported prior knowledge of OEND programs (77.6%), mostly through popular media sources (59.4%), from a colleague/at a conference (54.2%), or scholarly media or journal (33%). A small proportion of respondents (14.5%) had cared for a patient involved in OEND programs, whereas 13.9% reported a direct involvement with OEND programs.

Table 1. Characteristics of survey respondents

Characteristic	N = 459
Male (%)	281 (63.9)
Training (%)	
CCFP-EM	197 (44.9)
FRCPC	124 (28.2)
CCFP	45 (10.3)
Pediatric EM	4 (0.9)
Resident	69 (15.7)
Hours of patient care/week (mean, SD)	28.5 (11.1)
Hospital type (%)	
Urban tertiary centre	256 (58.3)
Community hospital	151 (34.4)
Rural/remote hospital	32 (7.3)
Region of employment (%)	
Ontario	221 (50.6)
Prairies	82 (18.8)
Western	80 (18.3)
Maritimes	29 (6.6)
Quebec	25 (5.7)

CCFP = Certification in the College of Family Physicians (Canada); CCFP-EM = Certification in the College of Family Physicians (Canada) with special competence in Emergency Medicine; FRCPC = Fellow of the Royal College of Physicians of Canada.

Respondents showed a positive attitude toward opioid OEND programs, with 86% reporting that they would be willing to prescribe or distribute naloxone from the ED (Figure 1). The chi-square analysis did not reveal a significant difference in willingness to prescribe based on gender ($p = 0.09$), practice setting ($p = 0.74$), or number of years in practice ($p = 0.13$). The data analysis did reveal a significant association between willingness to prescribe naloxone and EM credentials or province/territory of practice; physicians with a CCFP-EM designation were less likely to distribute naloxone ($p < 0.01$), as were physicians from the Maritimes ($p < 0.01$).

Survey respondents' identified barriers to participation in opioid OEND programs are represented in Figure 2. Perceived barriers included lack of allied health support for patient education (57%), lack of access to follow-up (44%), inability to train the patient in the use of the kit (42%), lack of knowledge surrounding the evidence for take-home naloxone (37%), inadequate time in the clinical encounter (37%), and lack of training in the prescription of naloxone (31%).

Respondents' awareness of groups who may benefit from OEND programs is depicted in Figure 3. In addition to individuals at risk for overdose, 77% of respondents identified that friends and family members may also benefit from OEND programs. The groups that were identified as high-users of the ED, by respondents answering "always" or "frequently" to seeing them in their practice, were patients with known or suspected prescription opioid dependence or heroin use (72%), patients using high doses of prescribed opioids (69%), and patients with opioid use with known or suspected use of alcohol or benzodiazepines (68%).

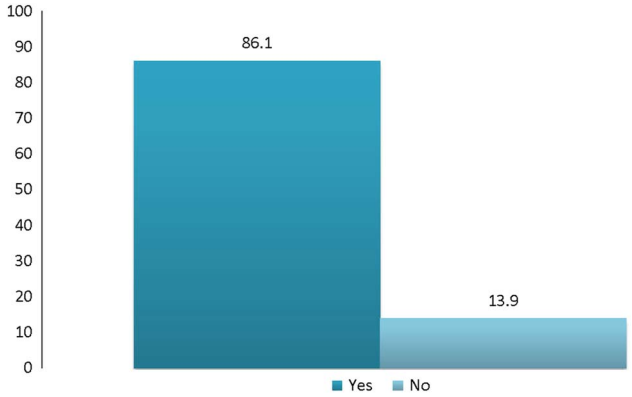

Figure 1. Survey Respondents' Willingness to Distribute Naloxone from the Emergency Department (%).

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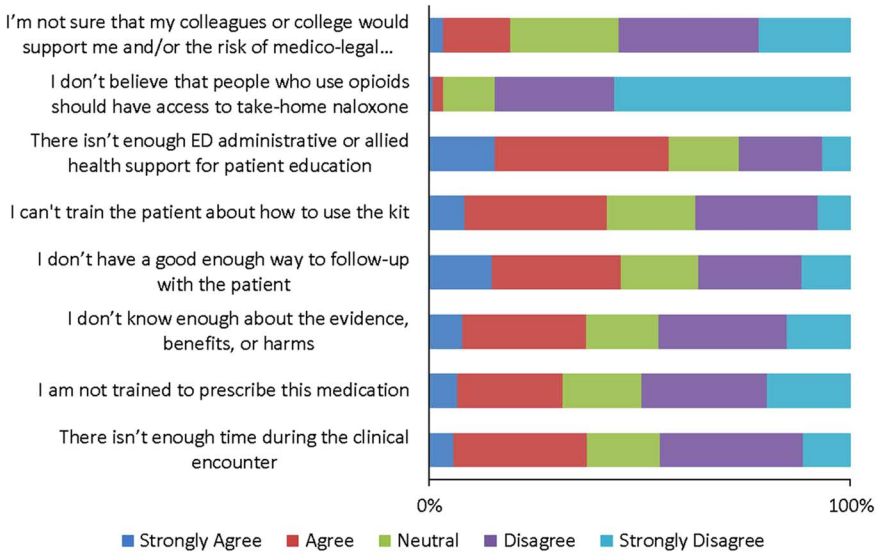

Figure 2. Survey Respondents' Identified Barriers to Distribution of Take-home Naloxone Kits from the Emergency Department.

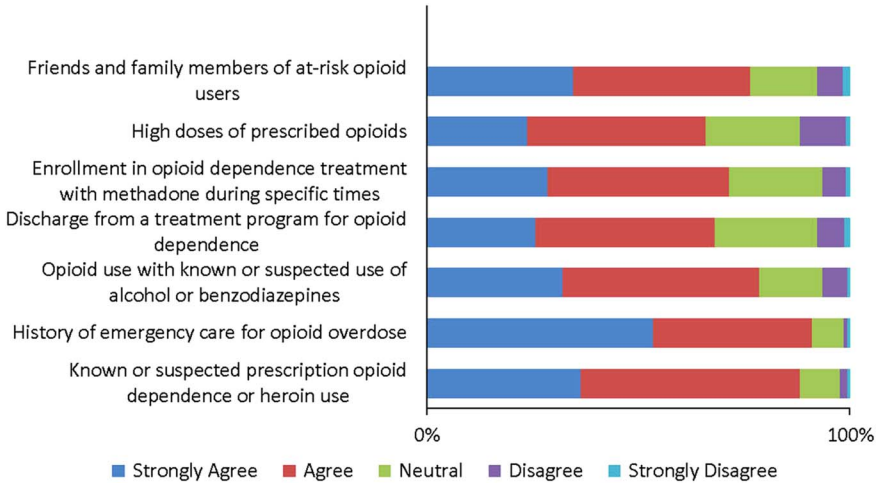

Figure 3. Survey Respondents' Awareness of Groups who may Benefit from Take-home Naloxone Programs.

When asked which member of the health care team was best suited to train recipients of OEND, emergency registered nurses and nurse practitioners were named most frequently (34% and 27%, respectively; Table 2).

DISCUSSION

Interpretation

This study found that Canadian emergency physicians are generally aware of and willing to distribute naloxone from the ED. Our respondents were in agreement with pre-specified groups who would benefit from OEND programs[6,20] and identified lack of allied health support, time in the clinical encounter, access to follow-up, and lack of training as the most important barriers to implementation of these programs. Our findings that physicians with CCFP-EM designation were less likely to prescribe naloxone could be due to variations in the regional distribution of physicians, with more Fellow of the Royal College of Physicians of Canada (FRCPC) physicians working in larger cities where exposure to opioid overdose patients and ED-based OEND programs are more common. Provincial data are unfortunately lacking, which limits any conclusions about the willingness to distribute naloxone based on the scale of the opioid misuse problem in each Canadian province, a gap that has been recognized at a federal level and is currently being addressed by the Canadian Institute for Health Information.[24]

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Table 2. Member of the health care team identified as best suited to train recipients of take-home naloxone kits

Health care provider (%)	N = 379
Emergency RN	150 (34.0)
Nurse practitioner	117 (26.5)
Emergency physician	81 (18.4)
Emergency pharmacist	27 (6.1)
Administrator	4 (0.9)

RN = registered nurse.

Previous reports

The overwhelmingly positive attitude we found is different from what had been previously reported.[25] This could be explained by increased exposure to OEND programs as opioid overdose deaths and drug-related ED visits continue to rise, in keeping with the majority of our survey respondents' reporting familiarity with these programs prior to this questionnaire. These programs have been widely adopted and sanctioned by respected institutions, especially in Canada with recent increased access to naloxone when it was removed from the Prescription Drug List and made available at no cost to people at risk for overdose.[7] The minister of health has also recently signed an interim order authorizing the expedited availability of intranasal naloxone in Canada for easier delivery and decreased risk to the first-responder.[26]

Physicians recognize that people at risk for opioid overdose are frequently seen in the ED, and that this setting could be ideal for the implementation of OEND programs. The inclusion of opioid-associated resuscitative emergencies and OEND in the 2015 updated AHA guidelines for CPR and emergency cardiovascular care[6] draws this intervention further into mainstream EM practice. A single-centre study of an OEND program in a Boston, Massachusetts ED found this setting to be feasible for education and naloxone distribution programs to a high-risk population in order to reduce opioid mortality.[27] A recent study surveyed recipients of take-home naloxone from an ED in Vancouver, BC and reported that 68% of patients using opioids were willing to accept take-home naloxone, suggesting that the ED is an effective setting for this program.[28] Further larger studies of ED-based programs are needed to evaluate implementation and cost-effectiveness.[29]

In our study, the willingness to distribute was not associated with practice setting or number of years in practice, making it unlikely that a generational difference could explain this change. This is comparable to a similar survey of American emergency physicians with regards to ED-based opioid harm reduction.[21]

LIMITATIONS

There are limitations to our study. Selection bias and non-response error are concerning, because respondents may have been more likely to have an interest or more positive sentiment toward the topic, and therefore may differ from non-respondents. This would increase our reported willingness to distribute naloxone. Our survey's low response rate may also limit external validity. This number is lower than previously reported physician response rates[19] and may be explained by the design and length of the survey, a lack of engagement in the subject matter, or survey fatigue. We did receive responses from a large number of CAEP members (459) from all areas of the country, except Quebec. This brings forward the consideration of coverage error, given that the original language of distribution of the study by CAEP is English, despite the availability of French translation upon request. Emergency physicians who are not members of CAEP are also not represented in this population.

IMPLICATIONS

Our survey respondents identified time, institutional supports, knowledge, and training as barriers that should be addressed in the design of ED-based OEND programs to ensure success. Support from local and national leaders in EM, and education programs with focus on the evidence supporting naloxone distribution and recipient training may increase uptake of this intervention from the ED. Recent legislative changes in Canada empower any member of the patient's care team to participate in OEND programs, which should only increase their use. The results of this study could inform the development of a workshop at a national meeting with the goal of dissemination of evidence and training in harm-reduction strategies from the ED. Future research should focus on implementation studies of ED-based OEND programs to demonstrate meaningful impact and describe how our identified barriers were overcome, as well as education strategies to address knowledge deficits.

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CONCLUSION

Canadian emergency physicians are willing to distribute take-home naloxone to patients at risk for opioid overdose, but strategies that will facilitate opioid OEND implementation are necessary.

These data will inform the development of ED-based naloxone distribution programs, with emphasis on multidisciplinary training and education.

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Competing interests: None declared.

SUPPLEMENTARY MATERIAL

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