Safe Opioid Prescribing for Pediatric Patients: An Interprofessional Learning Activity

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ABSTRACT

Introduction: An innovative online course on safe opioid prescribing for pediatric patients was designed by an interprofessional team of experts for an interprofessional target audience of clinicians in Wisconsin.

Methods: The 2-hour accredited course included recorded TED Talks-style presentations and interactive patient cases. A total of 227 course completers responded to pre- and posttests and a 20-item Interprofessional Collaborative Competency Attainment Scale (ICCAS). A Fisher exact test was used to compare pre/post first-attempt test responses and a 2-tailed t test compared the before/after ratings of ICCAS statements.

Results: Improvement on pre/posttest assessment was not significant. ICCAS showed significant increase of interprofessional competence for each statement.

Discussion: Interprofessional learning can be effectively incorporated in opioid-related continuing education.

INTRODUCTION

The opioid epidemic is well documented in Wisconsin and the greater United States. In Wisconsin between 2010 and 2019, opioid overdose deaths more than doubled.[1] While the opioid epidemic is continuously researched, its impact on the pediatric population is less investigated compared to the adult population. Multiple studies show that there is a significant variation in the mean days supplied of postoperative opioids in pediatric patients.[2] Approximately 1 in 20 adolescents who filled an opioid prescription after a surgery developed a new and persistent use,[3] and approximately 5% of past-year opioid naïve pediatric patients filled an opioid prescription greater than 90 days after their surgery.[4] Due to the large negative effects of this epidemic and the persistent duration, creative interventions are needed to eliminate the ongoing threat to individuals and communities.

Education is an important route in which the opioid epidemic can be addressed. Opioid-related education for health care providers is shown to improve knowledge and trigger changes in practice;[5] for example, such positive impact resulted from a 1-hour training for emergency medicine providers and other clinicians in Wisconsin.[6] The medical community in Wisconsin recognizes the need for and the value of continuing education to aid in alleviating the current crisis.[7] This article reports on an innovative, highly interactive, online educational intervention for health care providers in Wisconsin that was designed by an interprofessional team of experts for an interprofessional target audience of clinicians and that addresses safe opioid prescribing for pediatric patients.

METHODS

Course Description

The "Safe Opioid Prescribing for Pediatric Patients" course was provided by the University of Wisconsin-Madison Interprofessional Continuing Education Partnership (ICEP). Content experts, including physicians, pharmacists, and nurses, collaborated with

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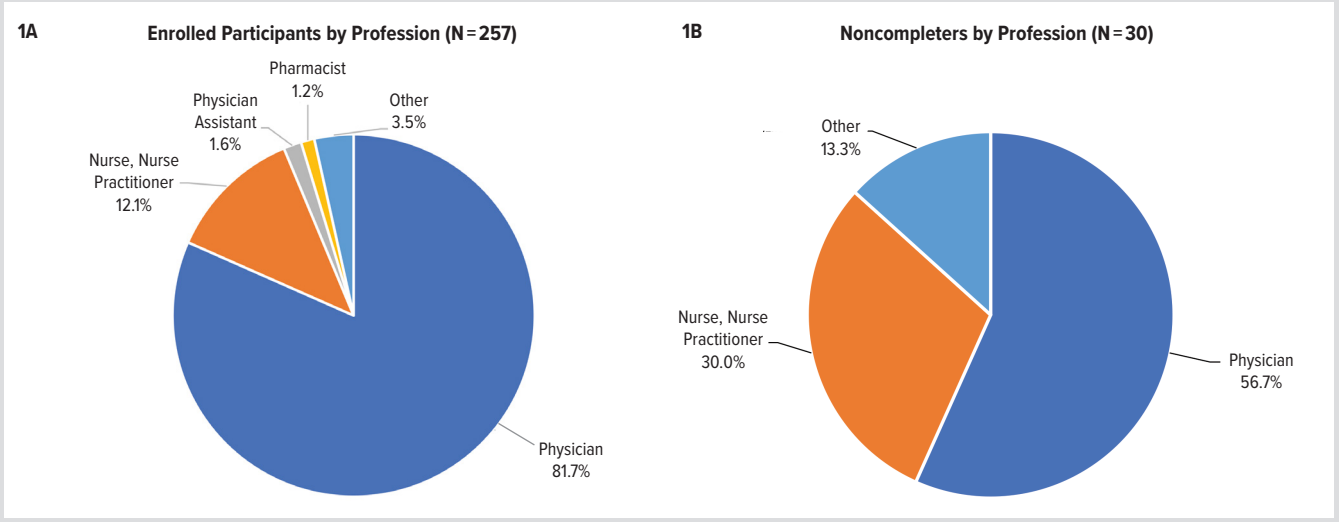
Figure. Enrolled Participants and Course Noncompleters by Profession



an instructional designer and accreditation specialists to develop this 2-hour on-demand course. The content addressed best practice for safe opioid selection, dosing, duration, and discontinuation in pediatric patients; techniques to minimize opioid use; safe use, storage, and disposal of prescribed opioids; and collaborative pain management in pediatric care. The course offered multiple opportunities to engage in active learning. These educational strategies included 5 TED-style presentations—delivered by a physician, a pharmacist, or a nurse; 6 unique patient cases designed to test clinical decision-making skills while supporting learning through immediate feedback; discussion questions; and embedded educational resources. Several types of continuing education credit were awarded with this course, including *AMA PRA Category 1 Credit*, American Nurses Credentialing Center (ANCC) Contact Hours and ANCC Pharmacotherapy Contact Hours, Accreditation Council for Pharmacy Education (ACPE) Contact Hours, American Psychological Association (APA) Credits, and American Board of Pediatrics (ABP) Maintenance of Certification (MOC) Part 2 Points. The course was also approved by the Wisconsin Medical Examining Board and met the state of Wisconsin continuing medical education (CME) requirement for education on responsible opioid prescribing.

Evaluation Methods

The course evaluation included pre- and posttest assessments; a post-activity evaluation survey to measure the quality of education and solicit learner commitment to practice change; a post-activity Interprofessional Collaborative Competency Attainment Scale (ICCAS), and a 3-month post-activity follow-up survey. For the purpose of this article, we highlighted test results, ICCAS data, and planned changes in practice.

The pretest consisted of 6 clinical vignette questions; the same questions were included in the larger posttest. Pre-responses versus post-responses to these 6 questions were compared using a Fisher exact test with a significance level of $P \leq 0.05$. Participants were allowed to take both the pre- and posttest multiple times; however, only their first attempt on each occasion was used in the data analysis.

Table 1. Comparison of Pre- to Posttest Responses to Six Assessment Questions

	No. of Correct Responses	No. of Incorrect Responses	Total No. of Responses
Pretest (245 respondents)	1039	431	1470
Posttest (229 respondents)	1010	363	1373

The Fisher exact test statistic value is 0.0943. The result is not significant at $P \leq 0.05$.

The ICCAS is a validated, 20-item self-reporting tool to assess behaviors associated with patient-centered, team-based, collaborative care.[8] Participants were asked to rate their ability perform each descriptive statement for "before" and "after" participation in the course on a 5-point scale: 1 = poor, 2 = fair, 3 = good, 4 = very good, and 5 = excellent. The course evaluation, including the ICCAS tool, was not required to earn continuing education credit, so each evaluation question/statement rating had a variable number of responses. A 2-tailed *t* test was used to compare the "before" and "after" ratings of ICCAS statements, with a significance level of $P \leq 0.05$.

The evaluation also included open-ended questions asking learners to state specific changes they planned to make in practice as a result of course participation and explain how their interprofessional team would utilize the information provided during the course. The responses were reviewed to identify themes.

RESULTS

A total of 257 health care professionals enrolled in the course; 227 completed all required educational components. The major-

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ity of completers (n = 193, 81.7%) were physicians. More than half of noncompleters were physicians, and the rest were in nursing or other professions (Figure).

First-attempt responses to the pretest were compared against the first-attempt posttest responses. The results indicated improvement, although not statistically significant, with a *P* value of 0.0943 (Table 1).

For the ICCAS tool, there was a range of 203 to 215 responses to each of 20 statements. Each statement was found to have a significant difference between "before" and "after" the course, with a *P* value of ≤ 0.05 (Table 2).

The 21st and final statement in the ICCAS tool refers to the overall ability to collaborate interprofessionally. The respondents were asked, "Compared to the time before the course, would you say your ability to collaborate interprofessionally is: (5 options from "much worse now" to "much better now" were listed). A total of 214 participants answered this question, reporting "much worse now" (1.0%), "somewhat worse now" (0.5%), "about the same" (57.0%), "somewhat better now" (30.0%), and "much better now" (11.0%).

Participants' statements about planned changes in practice included collaborative language, such as:

- "We will talk with each other regarding difficulty, options, and consultation for effective pain management."
- "Utilize pain management team when appropriate."
- Ask for health psychology to be part of our clinic practice."
- "Collaboration with subspecialists on pain management."

Other themes included appropriate use of opioids, nonopioid analgesics, and nonpharmacological therapies; use of distraction techniques with procedures; better conversations with parents; and encouraging families to get a locked box for opioids and safely disposing of leftover medication.

Table 2. Rating Averages for Interprofessional Statements Before and After Course Participation (ICCAS Tool)

Statement	Before Course Participation, Mean (no. of responses)	After Course Participation, Mean (no. of responses)	*P* value
Promote effective communication among members of an interprofessional (IP) team.	3.803 (213)	3.986 (213)	$1.75 \cdot 10^{-7}$
Actively listen to IP members' ideas and concerns.	3.898 (215)	4.079 (215)	$5.89 \cdot 10^{-8}$
Express my ideas and concerns without being judgmental.	3.822 (214)	3.972 (214)	$2.31 \cdot 10^{-6}$
Provide constructive feedback to IP team members.	3.738 (214)	3.883 (214)	$1.29 \cdot 10^{-6}$
Express my ideas and concerns in a clear, concise manner.	3.775 (209)	3.919 (209)	$2.16 \cdot 10^{-6}$
Seek out IP team members to address issues.	3.823 (209)	4.014 (209)	$1.03 \cdot 10^{-7}$
Work effectively with IP team members to enhance care.	3.865 (208)	4.072 (208)	$1.18 \cdot 10^{-9}$
Learn with, from, and about IP team members to enhance care.	3.846 (208)	4.029 (208)	$9.78 \cdot 10^{-8}$
Identify and describe my abilities and contributions to the IP team.	3.776 (210)	3.919 (210)	$6.31 \cdot 10^{-6}$
Be accountable for my contributions to the IP team.	3.840 (206)	3.978 (206)	$1.05 \cdot 10^{-5}$
Understand the abilities and contributions to the IP team.	3.825 (211)	4.000 (211)	$4.86 \cdot 10^{-7}$
Recognize how others' skills and knowledge complement and overlap with my own.	3.817 (208)	4.020 (208)	$3.56 \cdot 10^{-8}$
Use an IP team approach with the patient to assess the health situation.	3.819 (210)	3.986 (210)	$2.09 \cdot 10^{-6}$
Use an IP team approach with the patient to provide whole person care.	3.861 (209)	4.024 (209)	$4.65 \cdot 10^{-7}$
Include the patient/family in decision-making.	3.976 (208)	4.111 (208)	$1.05 \cdot 10^{-5}$
Actively listen to the perspectives of IP team members.	3.933 (208)	4.067 (208)	$1.70 \cdot 10^{-5}$
Take into account the ideas of IP team members.	3.928 (209)	4.048 (209)	$7.36 \cdot 10^{-5}$
Address team conflict in a respectful manner.	3.854 (205)	3.937 (205)	0.002
Develop an effective care plan with IP team members.	3.828 (203)	4.000 (203)	$1.30 \cdot 10^{-6}$
Negotiate responsibilities within overlapping scopes of practice.	3.818 (203)	3.975 (203)	$1.31 \cdot 10^{-6}$

Scale: 1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent.
Abbreviation: ICCAS, Interprofessional Collaborative Competency Attainment Scale.

DISCUSSION

The Midwest Interprofessional Practice, Education, and Research Center advocates for integration of interprofessional learning throughout the curricula.[9] This was one of the goals underlying the development of the described course, and it was accomplished by the interprofessional team of experts and planners who considered practice gaps and challenges experienced by health care teams who prescribe and administer opioids for pediatric patients. Significant improvement in the learners' interprofessional competence, measured by the ICCAS tool, may be explained by a

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deliberate effort of the course developers to (a) emphasize how this topic relates to different members of the health care team and requires collaborative practice, (b) involve faculty representing different members of the health care team typically caring for these patients, and (c) embed strategies for active learning in the course.

Participants' responses to the first-attempt posttest compared to the pretest showed a trend toward improved understanding of the material and its application to solve clinical cases, although this improvement was not statistically significant. Explanations of correct answers were provided to test-takers to reinforce knowledge and skills emphasized in the course. When incorrect responses were given, these explanations may have helped participants learn the skill or strategy they missed due to rushed participation or because the content was insufficiently covered in the course. Thus, the course facilitated clinician learning. It also met the State of Wisconsin requirement that physicians complete 2 CME credits on responsible opioid prescribing each biennium. Good participation and high course completion rate by physicians aligned with this requirement.

In the next iteration of this course, the planners intend to explore ways to better reach a more interprofessional group of health care professionals while striving for a higher percentage of completion by nonphysician learners. In addition to review of the current standards of practice, updating analysis of educational needs, and working with an interprofessional team of planners and presenters, the following strategies are being considered: inviting patients/caregivers to contribute to case development, adding an interprofessional panel discussion to the course, and tailoring the audience generation messages to the needs of all members of the health care team.

Evaluations of opioid-related continuing education programs were criticized for lack of measuring patient- or population-level outcomes,[10] and we acknowledge this limitation in our evaluation. Another limitation is that the data were mostly self-reported, with the exception of the pre- and posttest results. At the same time, use of the validated ICCAS tool was the strength of this evaluation. Finally, outcomes of this interprofessional course were not compared with a similar non-interprofessional course. Future evaluation or research studies could assess this comparison.

CONCLUSION

This brief report provides an example of how interprofessional learning can be effectively incorporated in on-demand, opioid-related continuing education for health care professionals. An interprofessional content-development effort, use of faculty whose professions reflect the target audience of learners, and employing engaging and interactive educational strategies that reflect team-based care can result in an increase in the participants' collective ability to collaborate interprofessionally.

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