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Evaluation of a Combined Online and In Person Training in the Use of Buprenorphine

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Abstract

To evaluate buprenorphine training methodology, we surveyed physicians who had completed a combined online and in person buprenorphine curriculum. Of 53/70 (76%) survey respondents, 57% were psychiatrists and 40% generalists. On a scale of 1 (very poor) to 7 (superlative), the overall training rated a mean of 5.8. The online course (5.0) rated lower than in person training components ($p<.001$) except for material that addressed the logistics of office practice. The in person patient interview received the highest rating (mean 6.3, $p<.001$). The 67% of physicians who intended to prescribe buprenorphine after the training were more likely than hesitant physicians to agree that the course provided enough information ($p<.05$) and that telephone access to experienced providers would improve their confidence ($p<.05$). Physicians hesitant to prescribe cited lack of experience as the main barrier (41%), with 24% concerned about induction difficulty and reimbursement. Overall, physicians preferred in person instruction and may benefit from additional experiential training and support after curriculum participation.

Keywords

buprenorphine; training; medical education; opioid dependence

INTRODUCTION

Opioid abuse is a major public health problem in the U.S. with an estimated 800,000 heroin dependent individuals (1) and 4.7 million individuals aged 12 and older who are current users of prescription pain relievers for non-medical purposes (2). Unfortunately methadone maintenance treatment, the oldest and most well studied form of opioid agonist treatment, is only available to approximately 150,000 patients nationwide (3). To address the national gap in opioid dependence treatment, the Drug Addiction Treatment Act of 2000 (DATA 2000) was signed into law allowing qualified physicians to prescribe opioid agonist medication in office-based settings outside of federally regulated methadone treatment programs, provided that the medication is FDA-approved for opioid dependence treatment (4).

Although DATA passed in 2000, no medication was available for office-based treatment until October 2002 when the FDA approved buprenorphine, a partial *mu*-opioid agonist and *kappa* antagonist, for use in the treatment of opioid dependence. Under DATA 2000, physicians without specialty substance abuse certification can qualify to prescribe

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buprenorphine by participating in eight hours of training sponsored by designated medical societies such as the American Society of Addiction Medicine (ASAM), American Psychiatric Association (APA), American Academy of Addiction Psychiatry (AAAP), and American Osteopathic Association (AOA). After training completion, physicians submit a notification of intent to prescribe buprenorphine to the Substance Abuse and Mental Health Services Administration (SAMHSA). Once approved by SAMHSA, they receive a DATA 2000 waiver ID number, commonly referred to as the “X” number since the number is determined by exchanging the letter “X” for the first letter of the physician’s Drug Enforcement Agency (DEA) registration number. Both the DATA 2000 waiver ID and DEA registration numbers are required on prescriptions for buprenorphine prescribed for opioid dependence (5).

As of April 2006, 10,484 physicians had completed eight hours of training. However, only 7341 requested and received a waiver from SAMHSA to prescribe buprenorphine for opioid dependence (Reuter, N., Center for Substance Abuse Treatment (CSAT), personal communication, April 2006), and nearly a third of waived physicians have not prescribed the medication based on preliminary findings from SAMHSA/CSAT’s Waivered Physician Survey (<http://buprenorphine.samhsa.gov/findings.pdf>, accessed March 21, 2006). Respondents to this and another national survey of waived physicians (6) cited logistical and economic barriers as reasons for not prescribing. Another potential reason for physician hesitation to request a waiver and begin prescribing could be insufficient preparation from eight hours of training, given that most courses have focused on didactics rather than experiential or interactive approaches which may be more effective for substance abuse training (7). For example, many in person physician trainings emphasize didactic instruction with slide presentations and case based discussions, while other models include trainings solely completed online or via CD-ROM, such as through the APA and AAAP.

Despite the importance of training physicians about buprenorphine to expand opioid-dependence treatment, no published studies to our knowledge have examined the impact of different buprenorphine training models. The purpose of the present study is to evaluate a combined online and in person curriculum which was supported by CSAT and sponsored by the APA. We also sought to determine factors associated with intention to prescribe buprenorphine after the training.

METHODS

Curriculum

Online Training—The 4-hour online course, Office-Based Buprenorphine Treatment, A Refresher Course for Physicians, was developed by the APA as a review for those who previously had completed eight hours of buprenorphine training (available at <http://www.psych.org/cme/apacme>, registration required, accessed March 21, 2006). The course provides an overview of buprenorphine treatment in office-based settings and includes five of nine content sections from the APA’s eight-hour online training that fulfills SAMHSA criteria for qualification. Both courses were updated in 2004 and cover basic and applied pharmacology, clinical management and dosing, and selecting an appropriate level of care. Sections absent from the four-hour review course include medical comorbidity and special treatment populations (e.g., pregnancy). Course registrants initially were informed that completion of the online course prior to the in person training was mandatory. Given concern that many participants would not complete the online training beforehand and thus be unable to receive a waiver, the time to complete the online course was extended to one week beyond the in person training.

In Person Training—The in person component began with a 30-minute review lecture on topics covered in the online training such as pharmacology and clinical efficacy. The lecture was followed by three hours of case-based discussion groups led by experienced providers. Case topics included patient assessment, induction and stabilization, dose tapering and detoxification, and specifically addressed content absent from the 4-hour online course such as special treatment populations. Cases were adapted from actual patients with potential identifying information altered. Both trainees and small group facilitators received a copy of the written cases, and the facilitator copy also included notes on teaching points with references to national treatment guidelines (8). All participants received a copy of the treatment guidelines reference (8) at the beginning of the training and a facilitator copy of the cases at the end of the training.

During one of the 30-minute discussion sessions, trainees interviewed two patients who were receiving buprenorphine maintenance, one with heroin dependence and the other prescription opioid dependence. Both patients had comorbid psychiatric disorders. The session was led by a clinical psychologist and was designed to allow physicians to learn about the patients' change in functional status after starting buprenorphine treatment, their experience during induction and stabilization, their involvement in psychosocial treatment, and how they deal with ongoing issues during maintenance such as recognizing triggers and managing cravings. In addition, participants observed the psychologist develop with each patient an emergency plan for impending relapse (e.g., deciding upon in advance two or three drug-free contacts for support).

The in person training concluded with a question and answer session on office logistics. Participants received documents in the course materials packet pertaining to office logistics and patient care (e.g., a DSM-IV opioid dependence worksheet, a consent for treatment with buprenorphine form, and a Clinical Opioid Withdrawal Scale), and they were able to ask questions of all participating instructors.

Survey Instrument

To improve generalization, the four-page, 33-item survey was adapted from the national Addiction Physician Survey conducted as part of a three-year evaluation of the waiver program for the Substance Abuse and Mental Health Services Administration (SAMHSA) (Stanton, A., CSAT, personal communication, January 2005), as well as surveys administered after standard buprenorphine trainings. The survey included questions on demographics, prior medical training, and experience managing patients with opioid dependence. Participants were asked to rate the curriculum and its components on a scale of 1 (very poor) to 7 (superlative). They were asked whether they intended to begin prescribing buprenorphine for office-based treatment of opioid dependence. Those hesitant to prescribe were surveyed on perceived barriers to prescribing, such as a lack of experience with the medication, concerns about induction, cost, and reimbursement. Using a 5-point Likert scale of 1 (strongly disagree) to 5 (strongly agree), physicians were asked to rate their level of agreement with statements on interest in learning more, confidence about prescribing buprenorphine, and whether telephone contact or first-hand experience with a physician familiar with providing buprenorphine treatment would improve their confidence. Estimated time to complete the survey was 5-10 minutes, and there were no unique identifiers enabling participant identification.

Survey Administration

All 70 physicians who participated in the curriculum were eligible for the study. A copy of the survey was placed in an information packet distributed at the in person training. During the introduction to the in person training, course participants were told about the survey and

the study purpose. They were informed that the survey was voluntary, confidential, and lacked unique identifiers. Participants were asked to state on the survey if they had completed the online course. The study was approved by the Institutional Review Board of the New York State Psychiatric Institute with a waiver of informed consent.

Data Analysis

Analysis of curriculum assessment measures primarily was descriptive with multiple paired t-tests used to compare continuous variables on ratings of curriculum components. To determine factors associated with physician willingness to prescribe buprenorphine after training completion, Chi-square tests were used for dichotomous variables and independent-samples t-tests for continuous variables. In some instances, factors were collapsed for analysis. For example, participants were divided into those who had psychiatric training and those who did not (e.g., internal medicine, family medicine, pain management, etc.). Physicians also were divided into those who had experience treating opioid dependence and those who did not.

RESULTS

Physician Characteristics

Of 70 physicians who attended the in person training, 53 (76%) completed the survey. Respondent demographics are listed in Table I. Most (72%) were practicing physicians while 27% were in training (12 residents and 2 fellows). The majority (57%) of physicians reported a background in psychiatry, with 40% in internal or family medicine. In addition, several specialized in treatment of HIV (11%), addiction medicine or addiction psychiatry (9%), pain management (9%), and neurology (6%). Many physicians (40%) reported no prior clinical experience treating opioid dependence or only having treated the medical or psychiatric complications of opioid dependence, while 28% had experience with detoxification, 23% with abstinence-based treatment, and 15% with methadone maintenance. One physician (2%) previously had prescribed buprenorphine for opioid dependence.

Forty-seven (89%) physicians reported that they completed the online course before the in person training, 5 (9%) did not start or partially completed the online course, and completion status was unknown for 1 (2%) respondent. The online course completion rates for those who responded to the survey were similar to completion rates for the whole group of 70 in person training attendees. As per the APA who oversaw the online course, 61/70 (87%) completed the online component before the in person training (Edner, B., personal communication, March 2005). Five (7%) had not started the course beforehand, and 2 (3%) had partially completed the course. Two (3%) physicians previously had completed 8-hours of training and already had a waiver from SAMHSA.

Training Program Assessment

Table II depicts mean physician ratings of the training and its components on a scale of 1 (Very Poor) to 7 (Superlative). Overall, participants favorably rated the combined online and in person training (mean 5.8). The 4-hour online course (mean 5.0) rated significantly less favorably than most aspects of the in person training (meeting with patients, small-group discussions, course syllabus, $p < .001$ for each comparison), with a trend toward a less favorable rating compared to the lecture on office logistics ($p = .05$). The session in which participants met with patients and the clinical psychologist rated highest among training components (mean 6.3, $p < .001$ for all comparisons). Most respondents stated that they intended to begin treating patients with buprenorphine after the training (34/51, 67%). Intention to prescribe buprenorphine did not vary by demographics or background

characteristics such as specialty or prior experience treating opioid dependence. Physicians who intended to prescribe were more likely than hesitant physicians (33%) to agree that the course provided enough information (mean score 4.6 vs. 4.0 respectively, $p<.05$) and to agree that they would benefit from telephone contact with an experience provider (mean score 4.6 vs. 4.2 respectively, $p<.05$). Most respondents expressed an interest in learning more about buprenorphine (85%), and that having first-hand experience visiting the office of a clinician with expertise in providing buprenorphine treatment would help improve their confidence using the medication (67%). However, physician response to these items did not differ by intention to prescribe.

Among the respondents who were hesitant to begin prescribing buprenorphine after the training, the primary barriers were a lack of experience (41%), concern that induction is difficult and time consuming (24%), and inadequate reimbursement (24%). Other barriers reported by 18% of respondents included: diversion risk, concern about DEA involvement, record keeping requirements, and difficulty accessing counseling services. No physician cited the 30-patient limit on the number of patients who could receive treatment from an individual provider or group practice which was in place at the time of the survey administration as a barrier to prescribing.

DISCUSSION

This study is, to our knowledge, the first to assess methods of training physicians about the use of buprenorphine for treatment of opioid dependence. Physicians were surveyed after participation in a CSAT-sponsored curriculum that fulfilled the eight-hour educational requirement specified by DATA 2000 for qualification to prescribe buprenorphine for treatment of opioid dependence. The curriculum combined four hours each of online and in person instruction with content standardized to national APA requirements. Although the combined approach was well received overall, survey respondents preferred in person instruction. In particular, they rated highest the session in which they met with and interviewed two patients on buprenorphine maintenance. During this session, they learned first hand about the patients' experience transitioning onto buprenorphine and became familiar with strategies to monitor and prevent relapse.

Survey respondents were divided into two groups for analysis: those who intended or were hesitant to prescribe buprenorphine after the training. Two thirds stated that they intended to prescribe buprenorphine after the training while a third expressed reluctance. Surprisingly, intention to prescribe buprenorphine did not vary by physician background characteristics such as specialty or prior experience managing opioid dependence. However, those who intended to prescribe buprenorphine were significantly more likely to feel that the curriculum provided enough information. They also were more likely to agree that telephone access to experienced providers would improve their confidence. This later finding is potentially important as physician confidence has been associated with more favorable practices regarding substance use disorders (9). Among physicians hesitant to begin prescribing buprenorphine, the primary barrier reported by 41% was a lack of experience.

Since eight hours of instruction fulfills only the minimal training requirement under DATA 2000, it previously has been expected that physicians would benefit from additional training, including experience with opioid-dependent patients on buprenorphine (10). While incorporating a greater degree of experiential training into an 8-hour course may not be feasible, the potential benefit of additional experiential training and access to experienced buprenorphine treatment providers served as the impetus to the development of the Physician Clinical Support System (PCSS). The PCSS is a national mentoring network established by SAMHSA in collaboration with ASAM and other specialty addiction medical

societies to assist physicians with the appropriate use of buprenorphine (available at <http://www.pcssmentor.org>, accessed March 20, 2006). Mentors experienced with buprenorphine treatment provide assistance by telephone, email, and at their place of clinical practice enabling interested physicians to gain experience with buprenorphine treatment through direct observation of in-office patient care. Thus, the mentoring can be tailored to the needs of the mentee. Based on our findings, one might expect that phone consultation would suffice for physicians who intend to prescribe after training completion, while in-office experiential training with a mentor might be necessary for those reluctant to prescribe. In addition, as nearly a quarter of hesitant physicians cited concern about induction difficulty as a barrier to prescribing, in-office mentoring provides an opportunity for the mentee to observe an induction first hand, potentially allaying concerns about the induction process.

Although the online course rated lower than most aspects of the in person training, the presence of an online component did not seem to diminish the overall opinion of the curriculum, given that the overall course rated similarly to the in person training components. The potential benefit of incorporating an online component into physician training is convenience; the online course can be completed any time of day and be stopped and resumed by participants. In addition, the pace of learning during online instruction may be adapted to suit the individual learner's needs, a benefit of potential importance with wide variation in clinical specialization of course participants. Nearly 90% completed the online training prior to the in-person component, and all attended a 30-minute review lecture at the start of the in-person training. With this introduction to the basics of buprenorphine treatment, participants anecdotally seemed to achieve a similar level of preparedness prior to the small-group discussions, thus enabling more sophisticated clinical discussion.

There are several limitations to the study. With a response rate of 76%, it is unknown whether program ratings or physician willingness to prescribe are under- or overestimated. Assessing the extent to which responders differ from total course participants is limited as little is known about the non-responders or the whole population of 70 trainees eligible for the study. The percentage of all trainees and survey respondents who completed the online course prior to the in-person training was similar, perhaps indicating a similar interest in and enthusiasm for providing office-based buprenorphine treatment. Although 67% reported intent to prescribe, we are unable to assess the percent who actually initiated treatment of opioid dependent patients with buprenorphine. Future studies should attempt to correlate physician background, curricular assessment measures, and perceived barriers with actual prescribing.

The current evaluation adds to and expands the literature on physician training in Australia (11) and the United States (12) on the use of buprenorphine. Hopefully, with ongoing evaluation of methods used to train physicians on the use of buprenorphine, we will be able to optimize physician preparation to provide this medication for office-based treatment of opioid dependence.

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Table I**Survey Respondent Characteristics**

Characteristic (n=53)	
Male, n (%)	33 (62%)
Medical school graduation year, mean (range)	1987 (1960-2002)
Race (n=52)	
White, n (%)	36 (69%)
Asian	9 (17%)
Hispanic/Latino	4 (8%)
Black	3 (6%)
Training level (n=52)	
Practicing physician, n (%)	38 (73%)
Physician-in-training	14 (27%)
Has a personal DEA number, n (%)	48 (92%)
Specialization (n=53)	
Psychiatry, n (%)	30 (57%)
Internal or Family Medicine	21 (40%)
HIV treatment	6 (11%)
Addiction Medicine or Addiction Psychiatry	5 (9%)
Pain management	5 (9%)
Neurology	3 (6%)
Clinical experience treating opioid dependence	
None or only medical/psychiatric complications, n (%)	21 (40%)
Detoxification	15 (28%)
Abstinence-based treatment	12 (23%)
Methadone maintenance	8 (15%)
Previously prescribed buprenorphine	1 (2%)

Table II**Mean Physician Ratings of the Training Program**

Training Component	Mean Rating^a (SD)
4-hour online course	5.0 (1.1) *
Small-group discussions of cases	5.7 (1.1)
Meeting with patients	6.3 (0.9) **
Office logistics	5.4 (0.9)
Syllabus and other materials	5.7 (0.9)
Overall combined training	5.8 (0.9)

^aRating from 1 = very poor to 7 = superlative, standard deviation (SD)

* $p < 0.001$ for all component comparisons with online course except office-logistics

** $p < 0.001$ for all component comparisons with meeting with patients