

## ORIGINAL RESEARCH

# Analysis of barriers to adoption of buprenorphine maintenance therapy by family physicians

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## ABSTRACT

**Introduction:** Opioid abuse has reached epidemic levels. Evidence-based treatments such as buprenorphine maintenance therapy (BMT) remain underutilized. Offering BMT in primary care settings has the potential to reduce overall costs of care, decrease medical morbidity associated with opioid dependence, and improve treatment outcomes. However, access to BMT, especially in rural areas, remains limited. This article will present a review of barriers to adoption of BMT among family physicians in a primarily rural area in the USA.

**Methods:** An anonymous survey of family physicians practicing in Vermont or New Hampshire, two largely rural states, was conducted. The survey included both quantitative and qualitative questions, focused on BMT adoption and physician opinions of opioids. Specific factors assessed included physician factors, physicians' understanding of patient factors, and logistical issues.

**Results:** One-hundred and eight family physicians completed the survey. Approximately 10% were buprenorphine prescribers. More than 80% of family physicians felt they regularly saw patients addicted to opiates. The majority (70%) felt that they, as family physicians, bore responsibility for treating opiate addiction. Potential logistical barriers to buprenorphine adoption included inadequately trained staff (88%), insufficient time (80%), inadequate office space (49%), and cumbersome regulations (37%). Common themes addressed in open-ended questions included lack of knowledge, time, or interest; mistrust of people with addiction or buprenorphine; and difficult patient population.

**Conclusions:** This study aims to quantify perceived barriers to treatment and provide insight expanding the community of family physicians offering BMT. The results suggest family physicians are excellent candidates to provide BMT, as most report regularly seeing opioid-addicted patients and believe that treating opioid addiction is their responsibility. Significant barriers remain, including inadequate staff training, lack of access to addiction experts, and perceived efficacy of BMT. Addressing these barriers may lower resistance to buprenorphine adoption and increase access to BMT in rural areas.

**Key words:** addiction, buprenorphine, family medicine, opioid, treatment access.



## Introduction

In recent years, the introduction of two important pieces of legislation has created new opportunities for the integration of substance abuse treatment into primary care<sup>1-3</sup>. First, the 2008 *Mental Health Parity and Addiction Equity Act* requires that health insurance companies impose similar financial requirements and treatments caps for mental health and substance abuse treatments as for general health benefits<sup>4</sup>. The 2010 *Affordable Care Act* built on this by seeking to provide affordable health insurance to all US residents, including access to mental health and substance abuse treatment<sup>2,3</sup>. The requirement that health insurance companies provide substance abuse treatment is especially relevant regarding treatment for opioid dependence, which has reached epidemic levels in the USA<sup>5,6</sup>. In 2010, more than 12 million individuals used prescription opioids for non-medical reasons, and there are currently over 100 drug overdose deaths daily<sup>7,8</sup>. Effective treatments for opioid dependence exist, but currently fewer than 20% of individuals with opioid dependence are able to access them<sup>9</sup>.

Buprenorphine is a partial agonist with a very high binding affinity at the  $\mu$ -opioid receptors<sup>10</sup>. This allows buprenorphine to both prevent opioid withdrawal and block the euphoria associated with opioid use. Maintenance therapy with buprenorphine, known as buprenorphine maintenance therapy (BMT), has been shown to reduce opioid use and overdose death in opioid-dependent populations<sup>11-15</sup>. Agonist therapy with a pharmacologic agent such as buprenorphine is considered first-line treatment for opioid dependence as it has been shown to reduce deaths by 30%, decrease HIV infections, and leads to lower rates of criminal activity<sup>16-22</sup>. Buprenorphine maintenance therapy is designed for office-based use and has been shown to be safe and effective in non-research primary care settings, even those with limited resources<sup>23,24</sup>. Offering BMT in primary care settings has the potential to reduce overall costs of care, decrease medical morbidity associated with opioid dependence, increase substance abuse treatment capacity, and improve treatment

outcomes of this patient population<sup>1,25-29</sup>. Yet, only 17% of those requiring treatment for any type of substance abuse receive it, and buprenorphine remains an example of an evidenced-based, but underutilized, treatment<sup>7,30-32</sup>.

Legislative changes have increased the number of individuals receiving substance abuse treatment, yet access to BMT, especially in rural areas, remains limited<sup>3,7,30-34</sup>. Family medicine is the specialty with the largest number of physicians involved in patient care, and is an important factor in the future success of the legislative campaign to increasing access to substance abuse treatment such as BMT<sup>35</sup>. Legal restrictions, geographic obstacles, and patient attributes have all been examined to better understand patterns of buprenorphine adoption, but the family physician perspective is not well-understood<sup>30,31,36-38</sup>. In other physician populations, access to counseling, a lack of time, and perceived knowledge deficits have been associated with decreased willingness to provide BMT<sup>39-44</sup>. In this article, prior research is expanded upon to quantify and further explore barriers and facilitators to buprenorphine adoption among family physicians in New Hampshire and Vermont, two largely rural states in New England.

## Methods

### *Survey development*

The questionnaire was designed adhering to groundwork and principles of rigorous survey design<sup>45</sup>. Survey development consisted of three stages. First, the literature on barriers to prescribing buprenorphine among physicians was reviewed<sup>34,40,46</sup>. Second, based on this literature, a preliminary version of the survey was designed. This version of the survey was shared with three experienced individuals in the content area for feedback. An updated version was shared with the same experts, who established expert validity of the survey instrument. Third, the survey was piloted to establish construct validity ( $n=13$ ).

Domains assessed by the survey included factors influencing buprenorphine adoption and opinions of opioids, addiction, and



treatment options. Specific factors assessed included physician factors, physicians' understanding of patient factors, and logistical issues. Respondents were asked to rate their opinion of 20 statements using a five-point Likert scale. Three open-ended questions allowed respondents to share additional information. Limited demographic information was collected.

## *Study design*

Both quantitative and qualitative survey questions were utilized. Data collection consisted of anonymous surveys. This decision was based on feedback from the pilot that indicated physicians were reluctant to acknowledge a lack of familiarity with opioid addiction or state negative opinions about addiction to researchers. It was determined that physicians would be more forthcoming via an anonymous survey as compared to more traditional qualitative methods such as interviews or focus groups. This approach has been successful in mixed-methods analysis of other value-laden topics<sup>47,48</sup>. The survey included open-ended questions, such as, 'What are the major barriers to providing buprenorphine at your clinic?' Space for additional comments was provided.

## *Data collection*

This survey was distributed via the New Hampshire and Vermont chapters of the American Academy of Family Physicians (AAFP). As each state chapter of the AAFP maintains confidential membership lists, it was not possible to determine how many family physicians received the survey invitation. The estimate of the clinically active family physicians for both states is 714 (430 in New Hampshire; 284 in Vermont)<sup>49-51</sup>, although only those who were active in the online state chapters of the AAFP received the survey invitation. The decision to distribute the survey entirely online was consistent with the anonymous survey design, which was based on feedback from the pilot.

Survey distribution was web-based and practicalities of using Survey Monkey® were tested prior to administration. Once a state chapter agreed to participate, the state representative emailed a unique website address to their members. The survey link was

active for 2 months and a reminder was sent 4–6 weeks after the initial email. Individuals receiving the survey were allowed to complete the survey once. Participants were eligible to complete the survey if they were a family physician in either Vermont or New Hampshire. Eligibility was determined by a series of demographic questions. Data collection occurred between September 2012 and March 2013.

## *Data analysis*

Survey responses were analyzed using STATA v12.1 (StataCorp; <http://www.stata.com>) and ATLAS.ti v7.0 (<http://atlasti.com>). Descriptive statistics summarized respondent's quantitative survey responses, collapsing the five-point Likert scale into dichotomous outcomes. Comparisons between respondents who identified as buprenorphine prescribers and those who did not were made using the  $\chi^2$  statistical test. Barriers/facilitators were correlated using a Pearson's *r* statistical test. Respondents also had the opportunity to share their thoughts in open-ended questions. These written comments were analyzed using an inductive analysis technique. Based on the patterns and categories of written comments, a coding scheme was developed and applied to the transcript of all written comments by one author (SR). The coded transcripts were then reviewed, developing a consensus by the authors (JD, SR) on the major ideas expressed in this section.

## *Ethics approval*

This study was granted exemption status by the Dartmouth-Hitchcock Medical Center's Committee for the Protection of Human Subjects.

## Results

A total of 108 completed surveys were received from family physicians, with greater than 75% responding to at least one open-ended question. Gender of respondents was evenly distributed, and 10% were buprenorphine prescribers. Respondents in New Hampshire did not differ significantly



from respondents in Vermont in demographics. Participant characteristics are displayed in Table 1.

## ***Perception of addiction and addiction treatment***

Greater than 80% of family physicians reported they regularly saw patients addicted to opioids. The vast majority (94%) stated that treating this patient population was difficult. Nearly three-quarters (73%) reported that they felt a personal responsibility, as family physicians, to treat opioid addiction. Of family physicians not prescribing buprenorphine, 10% were interested in becoming a BMT prescriber. Nearly one-third of non-prescribers reported they would be more likely to prescribe if they could have phone access to an addiction expert. This correlated with interest in becoming a BMT prescriber ( $r=0.60$ ,  $p<0.001$ ).

## ***Confidence in personal ability to treat addiction***

Regarding self-perception of ability to treat patients with opioid addiction, a quarter of respondents endorsed confidence in their ability to prescribe buprenorphine in accordance with accepted standards (Table 2). Slightly more respondents (28%) expressed confidence in their ability to treat psychiatric comorbidities. Current buprenorphine prescribers did not have more confidence in their ability to treat psychiatric comorbidities than did non-prescribers ( $p=0.17$ ).

## ***Perception of patient barriers***

A minority (41%) felt their patients with opioid addiction were motivated to discontinue illegal use and 41% agreed that these patients would be satisfied with BMT. Prescribers were more likely than non-prescribers to report perceived patient satisfaction with BMT (91% vs 35%,  $p<0.001$ ). Few non-prescribers felt BMT was affordable for patients, and non-prescribers were significantly more likely than prescribers to feel that cost was a barrier (92% vs 64%,  $p=0.005$ ).

## ***Perception of logistic barriers***

Among non-prescribers, perceived logistic barriers to buprenorphine adoption included inadequately trained

staff (88%), insufficient time (80%), inadequate office space (49%), and cumbersome regulations (37%).

## ***Remuneration***

Approximately half (52%) of family physicians felt that there should be special remuneration for prescribing buprenorphine. Many of these respondents wrote that they were 'not sure' what an appropriate reimbursement should be, but felt that a fee should 'cover the cost of office procedures and staff training' or be used specifically to 'pay for counseling time' or 'pay nurses to do urines, pill counts, etc.' Others stated a specific amount of money, ranging from \$100 to \$500 per visit, or a set monthly amount per patient.

## ***Qualitative responses***

Survey respondents were invited to share their comments in three open-ended questions. Over 75% of participants responded to at least one of the open-ended questions. The comments were designed to elicit what participants perceived as barriers to buprenorphine adoption by them personally, in their clinic or community. The most commonly occurring themes in the comments included lack of knowledge, time, or interest; mistrust; and difficulty treating patients with addiction.

**Lack of knowledge, time, or interest:** Comments frequently referred to a lack of knowledge, time and/or interest. Lack of knowledge referred both to family physicians ('[I] lack understanding of needs of patients with addiction') and their staff ('lack of staff knowledge about opioid addiction'). A lack of time suggested that family physicians felt their practices were already overburdened ('Practice is already full with waiting list for primary care') and a lack of time in daily schedule ('It takes a lot'). In fact, 'time' was the most frequently reported barrier in the comments section of the survey, cited by 25 of the 108 survey participants. The participants expressing concern about 'time' were much more likely to support additional remuneration for BMT (72% vs 46%,  $p=0.02$ ). Lack of interest was also a significant barrier to the provision of buprenorphine. Some family physicians (19%) stated they simply don't want to provide buprenorphine ('I do not wish to prescribe it [buprenorphine]'; 'not a provider by choice').



**Table 1: Demographics of all survey participants (prescribers and non-prescribers)**

Characteristic <sup>†</sup>	No. (%)
Gender	
Female	54 (50)
Male	54 (50)
State of practice	
New Hampshire	63 (58)
Vermont	45 (42)
No. of physicians in practice	
1 or 2	11 (10)
2–5	29 (27)
6–10	27 (25)
>10	41 (38)
Time since graduation (years)	
<5	15 (14)
5–10	11 (10)
11–15	25 (23)
>15	57 (53)

<sup>†</sup>  $p > 0.05$  for all characteristics of buprenorphine prescribers and non-prescribers shown

**Table 2: Physician perception of personal and patient barriers to buprenorphine adoption**

Statement	Total sample (N=108)	Buprenorphine prescribers (n=11)	Buprenorphine non-prescribers (n=97)	p value
	No. (%) agree with statement	No. (%) agree with statement	No. (%) agree with statement	
Treating patients with opioid addiction is difficult.	101 (94)	9 (82)	92 (95)	0.10
I am confident in my ability to prescribe buprenorphine in accordance with accepted standards.	27 (25)	11 (100)	16 (16)	<0.001***
I am confident in my ability to treat the psychiatric co-morbidities of patients with opioid addiction.	30 (28)	5 (45)	25 (26)	0.17
Buprenorphine is an effective treatment for opioid addiction.	61 (56)	10 (91)	51 (53)	0.015*
My patients with opioid addiction are motivated to discontinue use.	44 (41)	9 (82)	35 (36)	0.003
My patients with opioid addiction would be satisfied with BMT.	44 (41)	10 (91)	34 (35)	<0.001**
Cost of buprenorphine is a barrier for my patients.	96 (89)	7 (64)	89 (92)	0.005**
My patients are concerned about confidentiality.	16 (15)	2 (18)	14 (15)	0.77

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

BMT, buprenorphine maintenance therapy



**Mistrust:** Written comments conveyed a high level of mistrust, both of patients with addiction and of buprenorphine as a treatment. Concerning patients with addiction, family physicians indicated concern working with people who had a history of addiction. For example, one respondent stated he or she did not want to 'deal with addicts who lie – sell half of what they get from the pharmacy' and another stated that their office was 'not set up to function as a police agency'. One physician stated that a major barrier to prescribing buprenorphine for opioid replacement therapy was their own 'very negative attitude about treating a messy problem in a messy population'. Several comments indicated that family physicians would prefer if patients went elsewhere for addiction services ('I want these patients to go to a special center for this therapy rather than my clinic').

Mistrust concerning the diversion of buprenorphine was also expressed ('[a] significant amount of buprenorphine ... ends up in the community and schools'). Family physicians stated that they did not want to be known as a buprenorphine prescriber ('I don't want to become a local source for this'). Other comments indicated a lack of confidence in the philosophical basis of opioid maintenance therapy. There was a general sentiment that patients were substituting addictions ('trading one addiction for another') and skepticism that buprenorphine is an effective treatment long-term ('works long term').

**Difficulty treating patients with addiction:** Family physicians frequently cited the difficulty of treating patients with addiction issues, stating patients with addiction are a 'difficult population to manage'. Patients with drug addiction were referred to as 'high-maintenance', 'stressful', and 'challenging'. The difficulty of caring for patients with addiction was compounded by a perceived 'lack of easy access to high-quality, well-coordinated psychiatric care for comorbidities'. Family physicians stated that in order for them to consider treating patients with buprenorphine, they would 'need easier access to pain management and ... psychiatric care, as most of these patients seem to have comorbid depression, anxiety, bipolar, or personality traits/disorders'.

## Discussion

This study is the largest survey of family physicians about buprenorphine known to the authors, including more than 100 respondents, with 10% reporting first-hand experience with BMT. It investigates family physicians' attitudes towards BMT with the goal of quantifying perceived barriers and facilitators to providing treatment. The results suggest family physicians are excellent candidates to provide BMT for two key reasons: one, they report regularly seeing opioid-addicted patients, and two, most believe that treating opioid addiction is their responsibility.

The most commonly cited barrier to providing BMT was a lack of staff preparedness. While many family physicians were concerned about their personal ability to meet the needs of opioid addicted patients – expressing concerns about following regulations or treating psychiatric comorbidities – they were far more concerned about their staff's ability to do so. Training modules directed at alleviating this concern are freely available through a joint effort by the National Institute on Drug Abuse and Substance Abuse and Mental Health Services Administration<sup>52</sup>. Their buprenorphine awareness training products are specifically targeted at non-physicians, which may help physicians feel their clinical teams are prepared. Physicians themselves have access to free and low-cost online buprenorphine licensing courses, which also provide continuing medical education credits. Approximately 10% of family physicians reported an interest in prescribing buprenorphine, and stated that having phone access to an addiction expert would increase their willingness to prescribe. This intervention currently exists, as the Physician Clinical Support System-Buprenorphine (PCSS-B), a federally funded national mentorship network which includes phone support<sup>53</sup>. Increasing awareness of these free training opportunities and PCSS-B among the family physician community could increase the number of providers prescribing buprenorphine.

After staff preparedness, the main concern of non-prescribers was about having sufficient time to prescribe buprenorphine. If prescribing BMT was compensated at a higher rate, it is



likely that family physicians would be able to allocate more time for these patients. This is supported by the fact that those citing 'time' concerns in their comments were most likely to feel additional remuneration was appropriate. This would be commensurate with the fact that prescribing buprenorphine requires additional training and a special license. Additional survey results on cost and reimbursement suggest that family physicians believe patients cannot afford treatment. However, a survey of current buprenorphine prescribers in rural Washington State found that over 75% of patients receiving buprenorphine were insured. Furthermore, these family physicians indicated that patients 'always pay their bills' as 'it is worth it to them'<sup>34</sup>. Given the demand for buprenorphine, this may indicate an opportunity for family physicians to consider direct cash payments for providing BMT that would make it 'worth' their time. As a comparison, the current average charge for BMT in the USA is \$250–450 for an initial visit, with an additional monthly charge of \$150–250 for follow-up medical care<sup>54</sup>. This may differ depending on the practice and region, but education about possible compensation models for BMT may help family physicians see this as a viable option for their practice.

Another challenge remains in the perceived efficacy of buprenorphine: family physicians with first-hand experience prescribing buprenorphine had a much more optimistic view of its efficacy than did family physicians with no BMT experience. Furthermore, many used the open-ended questions to express concern that BMT was simply 'substituting' addictions. This commonly expressed view is outside the realm of evidence-based medicine, as research has shown that few individuals with opioid addiction successfully abstain from use without opioid replacement therapy<sup>11</sup>. A Cochrane review in 2008 found that medium and high doses of buprenorphine not only increased retention in treatment, but also suppressed heroin use significantly compared to placebo<sup>13</sup>. In contrast, behavioral interventions to treat opioid abuse are inadequate, as more than 80% of patients resume drug use within 2 years of intensive residential treatment<sup>55</sup>. Regarding concerns of diversion of buprenorphine, lessons can be learned from countries with successful buprenorphine use. For example, in France, nearly 20 years of unregulated buprenorphine prescriptions have resulted in increased

treatment for opioid addiction, decreased mortality from opioid-related overdoses, few buprenorphine-related medical complications, and low diversion<sup>56</sup>.

Other relevant findings cast doubt on perceived barriers reported in the literature. Specifically, all family physicians sampled agreed that treating patients with addiction was challenging. Buprenorphine prescribers and non-prescribers had equal confidence in their ability to treat patients' psychiatric comorbidities. In addition, cost was seen as less of a barrier by current buprenorphine prescribers than non-prescribers. This may indicate these issues may not be true barriers to buprenorphine adoption.

There are a number of potential limitations to the study at hand. The study sample size is relatively small and consists of family physicians in New Hampshire and Vermont, which may not be generalizable to all family physicians. Other concerns include the fact that non-members of AAFP may have been inadvertently excluded and this survey was distributed online, which requires participants to have access to email and internet. However, a survey of family physicians from 10 years ago found that approximately 95% had internet access at that time<sup>57,58</sup>. Additionally, while it is not possible to calculate an accurate response rate, the demographics of survey respondents are similar to the demographics of the overall AAFP membership<sup>57,58</sup>. That key questions (for example about the effectiveness of buprenorphine, importance of offering buprenorphine treatment, and interest in becoming a prescriber) consisted mainly of responses between 2 and 4 on a scale of 1 to 5 (with few extreme responses of 1 or 5) suggests that bias is contained. Additionally, the authors' decision to identify current buprenorphine providers and analyze their responses independently minimizes the positive bias associated with buprenorphine. Lastly, only family physicians were surveyed, so physician perception of patient barriers (such as cost) may not reflect patient reality.

## Conclusions

Despite the limitations, this study presents rich findings on barriers to buprenorphine adoption among family physicians,



integrating quantitative and qualitative information. Results suggest BMT remains an opportunity for family physicians to make a significant contribution to the public health of rural communities. However, adoption of buprenorphine faces resistance due to a multitude of factors explored in this study. The level of physician knowledge and trust of BMT remains low, although frustration regarding patients with opioid addiction may indicate an increased readiness to adopt new practices such as BMT. Addressing specific concerns about buprenorphine effectiveness and relative safety, as well as combating the stigma surrounding addiction and patients with mental illness, may help increase the availability of BMT in rural areas. Organizations should seek to support adoption of BMT by family physicians by increasing access to addiction experts, providing staff training, and educating family physicians about possible compensation models.

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