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## HIV Provider Endorsement of Primary Care Buprenorphine Treatment: A Vignette Study

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### Abstract

**Background and Objectives**—Opioid dependence is common among HIV-infected persons in the United States. Factors associated with HIV care providers recommending buprenorphine for opioid dependence are poorly defined. Using vignettes, we sought to identify HIV provider characteristics associated with endorsing buprenorphine treatment in primary care.

**Methods**—We used a cross-sectional survey of HIV providers, including 497 physicians, nurse practitioners, and physician assistants attending HIV educational conferences in 2006. Anonymous questionnaires distributed to conference attendees contained one of two vignettes depicting opioid-dependent patients. Respondents recommended type of substance abuse treatment for the vignette patient. Using logistic regression, we tested patient and provider factors associated with HIV provider endorsement of buprenorphine in primary care.

**Results**—Sixteen percent of providers endorsed buprenorphine treatment in primary care for vignette patients. Family physicians and general internists (AOR=2.8, CI=1.1–7.1), African American providers (AOR=3.0, CI=1.3–6.8), and those with previous buprenorphine prescribing experience (AOR=4.6, CI=1.2–17.9) were more likely to endorse buprenorphine treatment in primary care.

**Conclusions**—HIV providers infrequently endorsed buprenorphine treatment in primary care for vignette patients. Generalist and African American providers and those with previous buprenorphine prescribing experience are more likely to endorse buprenorphine treatment in primary care. Targeting generalist and minority providers may be one strategy to promote effective integration of HIV care and opioid addiction treatment.

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Buprenorphine is a medication with proven efficacy in treating persons with opioid addiction. Since 2002, physicians in the United States who have addiction medicine certification or who undergo buprenorphine training may obtain authorization from the federal government to prescribe buprenorphine for opioid addiction treatment outside of substance abuse treatment settings. Despite this opportunity, the incorporation of opioid addiction treatment into primary care and HIV care has been limited.<sup>1</sup>

Integration of opioid addiction treatment with HIV care may be of relevance and urgency for several reasons. First, the intersection between drug use and HIV infection is well established; in national samples of individuals receiving HIV care, nearly 25% of patients abuse drugs.<sup>2,3</sup> Treating addiction may also improve patients' adherence to antiretroviral therapy and their

HIV-related outcomes.<sup>4,5</sup> In addition, addiction treatment may help patients with HIV/AIDS decrease high-risk behaviors, reducing the risk of further HIV transmission.<sup>6–8</sup> Insufficient numbers of addiction treatment slots in specialty substance abuse treatment programs lends further urgency to adopting treatment approaches outside these settings.<sup>9</sup> Further, integrated HIV and addiction treatment has also been specifically associated with improvements in health and health care outcomes.<sup>10–12</sup>

Given the individual and public health benefits that buprenorphine treatment can offer, it is important to continue to develop strategies to facilitate its integration into settings where patients with HIV receive care, including primary care settings. Previous studies have identified provider-level barriers to prescribing buprenorphine, including lack of training, experience, time, and support and perceived patient complexity.<sup>13–15</sup> A single prior study addressing HIV providers found similar results.<sup>16</sup> In our previous analysis, we found that confidence in addressing drug problems and access to an addiction expert were associated with having obtained certification to prescribe buprenorphine.<sup>1</sup>

To further elucidate factors associated with HIV provider endorsement of buprenorphine treatment for opioid addiction, we sought to identify provider characteristics associated with decisions about providing buprenorphine treatment integrated into routine medical care by assessing providers' responses to patient vignettes.

## Methods

### Study Population

Health care providers who attended HIV conferences between February and May 2006 were surveyed. The day-long HIV clinical update conferences were sponsored by the International AIDS Society-USA (IAS-USA) in six US cities (Atlanta, Chicago, Los Angeles, New York, San Francisco, and Washington, DC). IAS-USA staff members distributed questionnaires at the beginning of the conference and collected them anonymously. The institutional review board at Montefiore Medical Center approved the study.

Health care providers included general internists, family physicians, infectious disease internists, physician assistants (PAs), and nurse practitioners (NPs). PAs care for patients independently of physicians but operate under a physician license, and NPs care for patients independently with practice agreements with physicians. Although PAs and NPs are excluded from the current legislation permitting physicians to prescribe buprenorphine for opioid dependence, they comprise approximately 20% of HIV providers in the United States, provide high-quality care, and have demonstrated substantial interest in prescribing buprenorphine.<sup>17,18</sup>

### Survey Instrument

The questionnaire was modified from previous questionnaires to focus on attitudes and practices related to buprenorphine and to allow for self-administration.<sup>14,19,20</sup> Questions inquired about provider and practice characteristics (age, race, gender, training, location, and years providing HIV care), experience with prescribing buprenorphine, attitudes toward drug users and drug treatment, confidence in and responsibility for screening and counseling about drug use, and endorsement about location and type of addiction treatment appropriate for a patient described in a brief vignette.

### Main Outcome—Response to Patient Vignette

Each survey contained one of two vignettes describing an opioid-dependent patient. Respondents were asked to endorse which of four treatment options would best serve the patient

described in the vignette: (1) buprenorphine treatment in primary care, (2) buprenorphine treatment in a substance abuse treatment program, (3) methadone treatment in a substance abuse treatment program, or (4) other substance abuse treatment. Outcome of interest was health care provider endorsement of substance abuse treatment with buprenorphine in a primary care setting.

We constructed the two vignettes about patients who would be eligible for receiving buprenorphine in primary care and who did not have absolute contraindications to such treatment according to current practice guidelines.<sup>21</sup> Vignette #1 described an employed heroin-only using patient. Vignette #2 described an unemployed heroin- and cocaine-using patient with symptoms of depression. We anticipated that a greater proportion of providers would endorse buprenorphine treatment in HIV primary care for the patient in Vignette #1 than the patient in Vignette #2 (See Appendix).

The race/ethnicity (African American, Hispanic, white) and gender of the patient described in both vignettes were varied, leading to a total of 12 unique vignettes. Vignettes were piloted and revised for clarity with a convenience sample of 17 HIV providers. Surveys were distributed so that approximately equal numbers of each vignette were given out.

## Analysis

We use bivariate analyses and logistic regression to test whether patient and provider factors were associated with provider endorsement of buprenorphine in the primary care setting. Vignette patient factors included in bivariate analysis were race/ethnicity (African American, Hispanic, white), gender, and illness severity (employed patient with heroin use only versus unemployed patient with opioid and cocaine use and depression symptoms). Provider factors included race/ethnicity (white, African American, Hispanic, other race), age, gender, training/specialty (general internal medicine or family physician, infectious disease physician, NP, or PA), three items about provider previous training/experience with addiction or buprenorphine, five items measuring attitudes about the treatability of opioid dependence, and sense of responsibility and confidence in screening for and counseling about drug use. All variables significantly associated with endorsing buprenorphine treatment in primary care at  $P < .20$  in bivariate analyses were included in the final multivariate model.

## Results

### Sociodemographic and Training Characteristics

Of the 1,258 health care providers who attended the six IAS-USA conferences, 625 (49.7%) responded to the survey. Surveys completed by physicians in training ( $n=22$ ) and physicians other than generalists (general internal medicine and family physicians) and infectious disease physicians ( $n=16$ ) were excluded from this analysis. Of the 587 eligible providers, data were missing for the patient vignette in 90 surveys, leaving 497 complete questionnaires for this analysis and a response rate of 41% for analysis (Table 1).

The mean age of the health care provider respondents was 46 years, and the majority were female ( $n=257$ , 52%) and white ( $n=332$ , 71%). More than half of the respondents reported knowing someone other than a patient who had a drug problem ( $n=297$ , 60%).

### Practice Characteristics

Few respondents worked in offices or settings in which buprenorphine was prescribed ( $n=85$ , 17%). Of the 323 physician respondents, 67 (21%) were certified to prescribe buprenorphine. Few of these physicians ( $n=19$ , 6%) had ever prescribed it, despite its availability in the United States since 2002.

## Attitudes Toward Opioid Treatment and Users

Most providers endorsed the statements that opioid addiction is a treatable illness (n=434, 87%) and that several relapses do not preclude successful future treatment (n=474, 95%). About one quarter of respondents felt that “most drug-dependent persons are unpleasant to work with” (n=133, 27%) and about one quarter felt “concerned about attracting too many drug users” if prescribing buprenorphine (n=102, 23%). A majority of respondents felt responsible for screening for (n=428, 86%) and counseling about (n=400, 81%) drug problems. Two thirds felt confident in screening for (n=346, 70%) and only half felt confident in counseling about drug problems (n=263, 53%).

## Responses to Vignette

Presented with a vignette patient potentially appropriate for receipt of buprenorphine treatment in primary care, only 16% (n=81) of providers endorsed a statement that such treatment would best serve the patient. Nearly half of the providers endorsed that buprenorphine in a substance abuse treatment program would best serve the patient (n=249, 49%), and an additional one third of these providers endorsed that methadone in a substance abuse treatment program would best serve the patient (n=153, 31%).

Neither the race/ethnicity nor gender of the vignette patient was associated with provider endorsement of buprenorphine treatment in primary care. More providers endorsed buprenorphine in primary care for the patient in the employed heroin-only using vignette than for the patient in the unemployed cocaine- and heroin-using vignette (24% versus 9%,  $P < .0001$ ) (Table 2).

Provider characteristics that were significantly associated with endorsing buprenorphine treatment in primary care for the vignette patients in bivariate analyses included: African American provider race (OR=2.4, CI=1.2–5.0), being a general internist or family physician (OR=3.8, CI=1.7–8.3), having previously prescribed buprenorphine (OR=3.7, CI=1.5–9.3), having confidence in screening for drug problems (OR=2.4, CI 1.3–4.6), and confidence in counseling about drug problems (OR=1.8, CI=1.1–2.9). Providers who felt drug users were unpleasant to work with were less than half as likely to endorse buprenorphine treatment in primary care as compared to those with more positive attitudes (OR=0.4, CI=0.2–0.7).

In multivariate analysis, African American provider race (AOR=3.0, CI=1.3–6.8), being a general internist or family physician (AOR=2.8, CI=1.1–7.1), and having prescribed buprenorphine (AOR=4.8, CI=1.2–18.9) remained statistically significantly associated with provider endorsement of buprenorphine treatment in primary care for the vignette patient, after controlling for the severity of the addiction characterized in the vignette patient.

## Discussion

In response to a patient vignette, few HIV providers attending HIV conferences in six US cities recommended buprenorphine treatment in primary care. One quarter of providers recommended buprenorphine in primary care for the heroin-only using vignette patient; only 9% recommended it for a more complex vignette patient with heroin and cocaine use. The paucity of provider endorsement for buprenorphine treatment in primary care reflects the significant work that remains in the area of provider training and systems change for buprenorphine to become a truly accessible treatment option for opioid-dependent HIV-infected patients nationwide. Several factors associated with endorsement of buprenorphine in primary care may be used to target training efforts to particular groups of providers and to modify current training strategies to further enhance availability of buprenorphine.

As expected, physicians experienced in prescribing buprenorphine were more likely to recommend buprenorphine in the patient vignettes compared with nonprescribers. Thus, creating additional opportunities and incentives for providers to gain experience, through mentorship (such as the national Physician Clinical Support System, [www.pcsmmentor.org](http://www.pcsmmentor.org)) or via the creation of quality benchmarks in screening, referring, and/or treating substance abuse may improve access. Residency training may be an optimal time to introduce and model buprenorphine treatment to trainees in primary care; a number of curricula and other resources are available to assist faculty members to teach about buprenorphine.<sup>22,23</sup>

Generalist physicians were more than twice as likely to endorse treating the vignette patient with buprenorphine in primary care as were infectious disease physicians. This finding was similar to that of a prior study in which faculty and resident physicians from primary care training programs (family medicine and internal medicine) were more likely to have positive attitudes toward buprenorphine prescribing than non-primary care-trained faculty and residents.<sup>24</sup> Further, integrating buprenorphine treatment into primary care has been found feasible and efficacious in a number of observational and experimental studies.<sup>25–27</sup> To promote appropriate treatment of HIV-infected and opioid-dependent patients in primary care, generalist physicians may be an ideal target group, receptive to integrating such treatment into routine care.

We also found that providers who identified as African American or black were three times as likely as white providers to endorse buprenorphine in HIV primary care. Minority physicians are more likely to work in underserved areas than white physicians and to provide care to vulnerable and underserved patients.<sup>28,29</sup> Because of their experience, they may be more sensitive to the need to treat opioid dependence among HIV-infected patients in the communities they serve. Further, physicians who practice in underserved areas may have less readily accessible specialty substance abuse services, and therefore primary care treatment may be the more realistic or even the only treatment option. One strategy to promote expanded access to buprenorphine in HIV primary care might be to target providers who work in such underserved areas, who may be more receptive to offering treatment for opioid dependence to their patients.

We found no association between the vignette patients' race or gender and provider recommendation for buprenorphine in primary care. Our study may have had insufficient power to detect such differences, or the vignette study may have failed to elicit provider biases. National data demonstrates that, compared with patients receiving methadone, patients receiving buprenorphine for opioid dependence are more likely to be white than non-white. Whether this disparity represents differences in access to care or frank racial biases is uncertain.<sup>30</sup> The health disparities literature, however, provides ample evidence that racial and ethnic minorities, and women, are less likely to be offered and/or accept recommended treatments for such conditions as coronary artery disease, end-stage renal disease, and arthritis.<sup>31–35</sup> Further, racial and ethnic minorities are less likely to be offered opioids for treatment of acute pain syndromes.<sup>36,37</sup> Despite our findings, we believe that ongoing assessment of clinical decision making in buprenorphine treatment is warranted to avert disparities in access to buprenorphine for persons of color.

Our study had several limitations. We acknowledge that the use of patient vignettes may not represent actual clinician decision making or treatment recommendations. In addition, the form of our question, in which participants were asked to choose only the single option that “best served” the hypothetical patient, may have underrepresented the degree to which participants may have considered buprenorphine in primary care an acceptable option. Such hypotheticals, however, increasingly have been used in the medical literature to study physician behavior and decision making. In a number of quality of care studies, physician responses to vignettes have

been found more accurate than chart review in predicting physician behaviors.<sup>38,39</sup> The authors of these studies argue for the utility of vignettes in assessing quality of care to control the variability in illness severity and patient characteristics.

Our low response rate also limits the generalizability of our findings. The HIV providers who completed the survey may have been more interested in the issue of substance use disorders and buprenorphine and therefore more likely to recommend buprenorphine treatment. Therefore, we believe that our findings may over-estimate the degree to which HIV providers endorse buprenorphine treatment in primary care, although without confirmatory studies this is speculative.

In summary, our study of provider and patient factors associated with endorsement of buprenorphine treatment in primary care found that HIV providers rarely endorsed treatment of opioid dependence with buprenorphine in primary care for vignette patients. To promote integration of buprenorphine into routine medical care requires additional work. Our finding that African American providers are more likely to endorse buprenorphine in primary care may indicate their greater experience in working with underserved communities where opioid dependence is identified as a common challenge. Generalist physicians who provide HIV care may be a willing target audience to promote uptake of buprenorphine in primary care. Because integrating HIV and opioid addiction treatment has important individual and public health implications, further study of and interventions with physicians who are receptive to buprenorphine treatment in primary care settings may be one strategy to improve the integration of HIV and opioid addiction treatment.

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## Appendix

### Patient Vignettes Included in Survey

#### VIGNETTE 1: EMPLOYED HEROIN USER

Luis is a 36-year-old married Hispanic man who has been sniffing heroin for the last 14 years. He recently came into care with you for his asymptomatic HIV infection. He works in a small delivery business, which entails long irregular work hours. He now believes his drug use has gotten out of hand and is seeking treatment. After you take a thorough drug history, you find that Luis has been increasing the daily amount spent on drugs from \$20 to \$50, has tolerance to the effects of the heroin, and suffers from withdrawal in the absence of drug. You are confident he meets criteria for opiate dependence. Luis has previously been to detox (three times) and once to a 28-day inpatient program. Luis stopped using for several months after each treatment episode. He smokes cigarettes but doesn't use any other illicit substances or alcohol.

#### VIGNETTE 2: UNEMPLOYED HEROIN AND COCAINE USER

Claire is a 28-year-old white woman who you have seen once before for asymptomatic HIV infection. Claire now believes her drug use has gotten out of hand and is seeking treatment. She has an 8-year history of heroin use. She tells you she has difficulty sleeping and feels



nervous and depressed frequently. She is living with friends after losing her job as a clerk in a large retail chain. Recently she has been buying oxycontin and also injecting heroin more frequently (increasing her spending from \$40 to \$100 per day). She comes to you wanting to try buprenorphine, which she heard about from a friend. In addition to heroin, Claire uses cocaine or crack 4–5 days per week. After taking a thorough drug history, you are confident she meets the criteria for opiate dependence. She has never been in drug treatment before.

Table 1

## HIV Provider Characteristics

Characteristic	# (%) n=497
Age, mean (standard deviation)*	46 (9)
Female gender*	257 (52)
Race/ethnicity*	
White	332 (71)
Black	47 (10)
Hispanic	35 (7)
Other race	57 (12)
Professional training	
Infectious diseases specialist	124 (25)
General internist or family physician	199 (40)
Physician assistant or nurse practitioner	174 (35)
Know person with "drug problem" other than patient*	297 (60)
Certified to prescribe buprenorphine <sup>†</sup>	67 (21)
Have prescribed buprenorphine <sup>†</sup>	19 (6)
Strongly agree or agree that...*	
Opiate addiction is a treatable illness	434 (87)
Opiate addiction treatment and HIV treatment should be kept separate	61 (13)
A drug-dependent person who has relapsed several times probably cannot be treated	23 (5)
Most drug-dependent persons are unpleasant to work with	133 (27)
Concerned that will attract too many drug users if start prescribing	102 (23)
Very or moderately responsible to...*	
Screen for drug problems	428 (86)
Counsel about drug problems	400 (81)
Very or moderately confident in...*	
Screening for drug problems	346 (70)
Response to patient vignette	
Buprenorphine in a primary care setting	81 (16)
Buprenorphine in a substance abuse treatment program	241 (49)
Methadone in a substance abuse treatment program	153 (31)
Other substance abuse treatment, without an opiate agonist medication	22 (4)

\* Missing values for age (33), gender (11), race (26), know person with drug problem (4), certified to prescribe buprenorphine (41), office/colleagues prescribe buprenorphine (74), opiate addiction is treatable (7), opiate addiction and HIV treatment separate (12), multiple relapses preclude successful treatment (8), drug-dependent persons unpleasant (7), concerned to attract too many drug users (29), responsible to screen (6), responsible to counsel (7), confident and screening and counseling (6).

<sup>†</sup> Of physicians, 6 missing

**Table 2**

Factors Associated With Provider Endorsement of Treating Vignette Patient With Buprenorphine in Primary Care

Characteristic	# (%) Endorsing Buprenorphine Treatment in Primary Care *	Odds of Endorsing Buprenorphine in Primary Care (Confidence Interval)	Adjusted Odds of Endorsing Buprenorphine in Primary Care (Confidence Interval)
<b>Vignette patient characteristics</b>			
Unemployed with heroin and cocaine use	28 (9)	0.3 (0.2–0.5) †	0.2 (0.1–0.4) †
Male	39 (16)	1.0 (0.6–1.6)	—
African American or Hispanic	52 (15)	0.8 (0.5–1.3)	—
<b>Provider characteristics</b>			
Mean age (per year)	46 (SD=8.6)	1.0 (0.97–1.02)	—
Provider race/ethnicity			
White	45 (14)	Reference	Reference
Black	13 (28)	2.4 (1.2–5.0) †	3.0 (1.3–6.8) †
Hispanic	7 (20)	1.6 (0.7–3.9)	1.4 (0.5–3.6)
Other race	10 (18)	1.4 (0.6–2.9)	2.1 (0.9–5.2)
Provider Training			
Infectious disease specialist	8 (7)	Reference	Reference
General internist or family physician	41 (21)	3.8 (1.7–8.3) †	2.8 (1.1–7.1) †
Physician assistant or nurse practitioner	32 (18)	3.3 (1.5–7.4) †	2.5 (1.0–6.3) †
Certified to prescribe buprenorphine	18 (22)	1.6 (0.9–2.9) ‡	0.7 (0.3–1.6)
Has prescribed buprenorphine	8 (40)	3.7 (1.5–9.3) †	4.8 (1.2–18.9) †
Knows someone with drug problem	53 (18)	1.4 (0.8–2.2)	—
<b>Provider attitudes</b>			
Strongly agree or agree that...			
Opiate addiction is a treatable illness	72 (17)	1.2 (0.5–2.6)	—
Opiate addiction treatment and HIV treatment should be kept separate	6 (10)	0.5 (0.2–1.2) ‡	0.4 (0.1–1.3)
A drug dependent person who has relapsed several times probably cannot be treated	1 (4)	0.2 (0.03–1.7) ‡	0.4 (0.05–3.2)
Most drug-dependent persons are unpleasant to work with	11 (8)	0.4 (0.2–0.7) †	0.4 (0.2–0.9)
Concerned that will attract too many drug users if start prescribing *	12 (12)	0.7 (0.3–1.3)	—
Provider is responsible to screen for drug problems	74 (17)	2.0 (0.8–4.8) ‡	1.1 (0.4–3.2)
Provider is responsible to counsel about drug problems	66 (17)	1.1 (0.6–2.0)	—

Characteristic	# (%) Endorsing Buprenorphine Treatment in Primary Care *	Odds of Endorsing Buprenorphine in Primary Care (Confidence Interval)	Adjusted Odds of Endorsing Buprenorphine in Primary Care (Confidence Interval)
Very or moderately confident in...			
Screening for drug problems	67 (19)	2.4 (1.3–4.6) <sup>†</sup>	2.1 (0.8–4.9)
Counseling about drug problems	52 (20)	1.8 (1.1–2.9) <sup>‡</sup>	1.1 (0.6–2.2)

\* All percentages refer to row percentages. No adjustments were made in the alpha level to account for multiple comparisons.

<sup>†</sup> < 0.05

<sup>‡</sup> < 0.20