Drug and Alcohol Dependence 122 (2012) 241–246

Contents lists available at SciVerse ScienceDirect

Drug and Alcohol Dependence

journal homepage: www.elsevier.com/locate/drugalcdep

Receipt of opioid agonist treatment in the Veterans Health Administration: Facility and patient factors

Elizabeth M. Oliva [a], Alex H.S. Harris [a], Jodie A. Trafton [a], Adam J. Gordon [b,*]

[a] Center for Health Care Evaluation, VA Palo Alto Health Care System, 795 Willow Road (Mailcode 152 MPD), Menlo Park, CA, United States
[b] Center for Health Equity Research and Promotion, VA Pittsburgh Healthcare System, Mental Health Research, Education, and Clinical Center, VA Pittsburgh Healthcare System, Center for Research on Health Care, University of Pittsburgh, 7180 Highland Drive (Mailcode 151-C-H), Pittsburgh, PA 15206, United States

ARTICLE INFO

Article history:
Received 24 January 2011
Received in revised form 3 October 2011
Accepted 8 October 2011
Available online 23 November 2011

Keywords:
Opioid-related disorders
Buprenorphine
Methadone
United States Department of Veterans Affairs

ABSTRACT

Background: Opioid agonist treatment (OAT)—through licensed clinic settings (C-OAT) using methadone or buprenorphine or office-based settings with buprenorphine (O-OAT)—is an evidence-based treatment for opioid dependence. Because of limited availability of on-site C-OAT ($n = 28$ of 128 facilities) in the Veterans Health Administration (VHA), O-OAT use has been encouraged. This study examined OAT utilization across VHA facilities and the patient and facility factors related to variability in utilization.
Method: We examined 12 months of VHA administrative data (fiscal year [FY] 2008, October 2007 through September 2008) for evidence of OAT utilization and substance use disorder program data from an annual VHA survey. Variability in OAT utilization across facilities and patient and facility factors related to OAT utilization were examined using mixed-effects, logistic regression models.
Results: Among 128 VHA facilities, 35,240 patients were diagnosed with an opioid use disorder. Of those, 27.3% received OAT: 22.2% received C-OAT and 5.1% received O-OAT with buprenorphine. Substantial facility-level variability in proportions of patients treated with OAT was found, ranging from 0% to 66% with 44% of facilities treating <5%. Significant patient-level predictors of OAT receipt included being male, age ≥56, and without another mental health diagnosis. Significant facility-level predictors included offering any OAT services (C-OAT or O-OAT) and specialty substance abuse treatment services on weekends.
Conclusion: In FY2008, prior to the VHA national mandate of access to buprenorphine OAT, substantial variation in the use of OAT existed, partially explained by patient- and facility-level factors. Implementation efforts should focus on increasing access to this evidence-based treatment, especially in facilities at the low end of the distribution.

1. Introduction

Implementation of novel treatments into large healthcare systems can be difficult. System-, provider-, and patient-level factors may limit or facilitate the uptake of new, evidence-based treatments. Opioid agonist treatment (OAT) combined with non-pharmacologic therapy is the most effective treatment for opioid dependence (National Consensus Development Panel on Effective Medical Treatment of Opiate Addiction, 1998). Historically, in the United States, OAT has been provided in a specialized licensed clinic setting using methadone. In part because of barriers to accessing clinic-based OAT (C-OAT) facilities—including geography, economy, or ideology—the number of patients with opioid dependence accessing C-OAT has been relatively low (Lewis, 1999). In an effort to expand the availability of OAT, in 2002, the United States federal government made sublingual buprenorphine available for use in office-based settings.

Buprenorphine has been shown to be a safe and effective treatment of opioid dependence in non-specialized, outpatient, office-based settings (Fiellin et al., 2006; Fudala et al., 2003; Stein et al., 2005). Recent evidence suggests that use of buprenorphine has produced positive patient-level outcomes in primary care and other outpatient settings (Alford et al., 2007; Fiellin et al., 2008; Parran et al., 2010; Sullivan et al., 2008). Compared to methadone C-OAT, office-based OAT (O-OAT) using buprenorphine has been shown to be effective and cost-effective, including in large health care environments, such as the Veterans Health Administration (VHA) (Mattick et al., 2008, 2009; Harris et al., 2005; Barnett, 2009; Jones et al., 2009).

We previously reported that implementation of buprenorphine O-OAT has been slow and not uniform among facilities within the VHA (Gordon et al., 2007). By October 2005, six Veterans Integrated

* Corresponding author. Tel.: +412 954 5201; fax: +412 954 5638.
E-mail address: adam.gordon@va.gov (A.J. Gordon).

0376-8716/$ – see front matter © 2011 Published by Elsevier Ireland Ltd.
doi:10.1016/j.drugalcdep.2011.10.004

Service Networks (VISNs) representing large geographical areas within the VHA had yet to provide a single dose of office-based buprenorphine (Gordon et al., 2007). Since then, VHA has taken steps to increase utilization of O-OAT including adding buprenorphine to the national formulary and establishing criteria for its use (Goodman et al., 2007). In September 2008, the VHA developed and adopted the Uniform Mental Health Services in VA Medical Centers and Clinics Handbook (Department of Veterans Affairs, Veterans Health Administration, 2009). This handbook enumerated essential components of all VHA mental health programs that were to be available nationally to ensure that all Veterans have access to appropriate evidence-based mental health services. The handbook specifically mandates that pharmacotherapy for opioid dependence should be offered to every Veteran for whom it is indicated and not medically contraindicated.

The VHA mandate for universal availability of OAT offers a unique opportunity to evaluate the spread of an evidence-based treatment in a large health care system prior to strong institutional endorsement. The goals of the present study were to examine patient- and facility-factors associated with OAT receipt among patients with opioid use disorder treated in the VHA prior to a mandate for universal availability of OAT pharmacotherapy. In light of the recent efforts to expand OAT utilization through O-OAT, we are also interested in understanding between-facility variation in OAT receipt based on the type of OAT services available at each facility. This study aims to provide data regarding OAT receipt in a large health care system that may identify potential implementation strategies.

2. Methods

2.1. Participants

To define a denominator of patients that plausibly would be candidates for OAT, we included outpatients and inpatients treated in the VHA who had an opioid use disorder diagnosis—either opioid abuse or opioid dependence diagnoses—even though methadone or buprenorphine are approved for patients with opioid dependence (American Psychiatric Association, 1995). We included opioid abuse because of a lack of fidelity in coded medical records to opioid abuse/dependence diagnostic distinctions (e.g., some patients have both abuse and dependence diagnoses and a number of patients prescribed these medications only have a diagnosis of opioid abuse) as well as planned revisions to the upcoming Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition that will eliminate the distinction between abuse and dependence (American Psychiatric Association, 2010). Using the VHA National Patient Care Database for both inpatients and outpatients, we identified all patients who received an opioid use disorder diagnosis (*ICD-9-CM* codes 304.0x, 305.5x, and 304.7x) in fiscal year (FY) 2008 (i.e., 10/1/07 to 9/30/08). National Patient Care Database records include updated patient demographic information, the date and time of service, the number of practitioner(s) who provided the service, the location where the service was provided, diagnoses, and procedures. Patients who received treatment at multiple facilities were assigned to a single, home facility that reflected the facility at which they were most frequently treated for a SUD diagnosis or substance related issue.

2.2. Measures

2.2.1. OAT. The main outcome of this study is receipt of *any* OAT, defined as receipt of buprenorphine, buprenorphine/naloxone, or methadone in C-OAT settings or buprenorphine or buprenorphine/naloxone in O-OAT settings. To determine the proportion of patients with opioid use disorders who received any OAT we examined FY2008 data from the VHA National Patient Care database and VHA Decision Support System database inpatient and outpatient files. Patients who received C-OAT were defined as those with at least one visit to a VHA licensed opioid agonist treatment clinic (defined as one visit with a VHA 523 clinic identifier). Data were not available with regard to the specific methadone doses given at C-OAT clinics because clinics typically keep these data in separate systems that are not linked to centralized VA pharmacy databases. Patients who received O-OAT in FY2008 were identified through the Decision Support System which contains inpatient and outpatient pharmacy benefits files with records of all medications dispensed by VHA pharmacies. Receipt of O-OAT was defined as a patient receiving at least one prescription for oral formulations of buprenorphine or buprenorphine/naloxone (hereafter collectively termed buprenorphine) but no visits with a 523 clinic identifier. We also examined the number of prescriptions provided to each patient receiving buprenorphine OAT. Prescription counts were defined as a sum of all prescriptions for 8 mg plus all prescriptions for 2 mg of buprenorphine, thus patients may have multiple prescriptions per day depending on their prescribed doses.

2.2.2. Patient characteristics. To determine whether patient characteristics were associated with receipt of OAT, data on gender, age, and dual diagnosis status were obtained from the National Patient Care Database. Age was classified into 3 age groups: less than 31 years old, 31–55 years old, and greater than 55 years old. Dual diagnosis status was defined as concurrent diagnosis of any psychiatric disorder other than alcohol or other substance use disorders. No other potentially predictive patient characteristics were included because they were either not available (e.g., socioeconomic status) or unreliable (e.g., race) in VHA administrative data.

2.2.3. Facility characteristics. Facilities were identified by their three-digit station code. Facility characteristics were determined primarily from data from the 2008 Drug and Alcohol Program Survey. Conducted by the VA Office of Mental Health Services, Program Evaluation and Resource Center, the Drug and Alcohol Program Survey is a biennial survey of key personnel at VHA sites that have a specialty substance use program and obtains information about programs' practices and available services. The Drug and Alcohol Program Survey variables included in this study include whether the following services were available at the facility: weekend services, weeknight services, women Veteran services, specific services for Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) Veterans, medications for psychiatric problems, dual diagnosis services, pharmacotherapy for smoking, and pharmacotherapy for alcohol use.

Additional Drug and Alcohol Program Survey facility-level variables included in this study were whether treatment improvement protocols were used in decision-making regarding patient treatment and the number of evidence-based treatment practices offered at the facility. Eight practices were identified: motivational enhancement therapy, 12-step facilitation, cognitive-behavioral therapy, contingency management, behavioral couples therapy, family therapy, community reinforcement approach, and seeking safety. Furthermore, the percentages of patients treated at each facility who lived in private residences versus VHA-related facilities (VHA housing, contracted or subsidized VHA housing) were included. We also examined the ratio of SUD clinic staff to 100 patients diagnosed with substance use disorders (SUD) and the proportion of SUD clinic staff prescribers to 1000 Veterans with SUD at each facility by combining Drug and Alcohol Program Survey and National Patient Care Database data.

Among the 128 VHA facilities, three (2.3% of all facilities) did not have specialty substance use programs and thus were missing Drug and Alcohol Program Survey data at the facility-level. There were three additional VHA facilities (2.3% of all facilities) that did not complete questions regarding weekend and weeknight services. Overall, the percentage of missing facility-level data for this study was small and ranged from 2.3% to 4.6%.

The type of OAT service available at each facility was obtained from the VA Program Evaluation and Resource Center and was included as a facility factor. The variable is based on a hierarchical classification of the type of OAT service available at the facility, where sites were assigned to the highest number describing services offered at their facility: (1) no services, (2) contracted C-OAT, (3) O-OAT, and (4) licensed C-OAT. Contracted C-OAT was ranked lower than O-OAT in the hierarchy because having O-OAT available at the facility provided more accessible services than contracted C-OAT available outside of the facility.

2.3. Analyses

To describe variability in facility-level utilization of OAT, we calculated the rate of OAT receipt (number of patients who received OAT divided by the number of patients diagnosed with an opioid use disorder) in each of the 128 VHA facilities. We describe this variability in relation to the OAT services available in order to better understand between-facility variation in OAT receipt based on available OAT services. All patient- and facility-level analyses were performed using mixed-effects logistic regression models, with a random effect for facility to account for the clustering of patients within VHA facilities. We first constructed a multivariate mixed-effects logistic regression model predicting receipt of OAT using all predictor variables. We then trimmed the non-significant predictors from this full model, resulting in the final multivariate model. All multi-level statistical analyses were conducted using the glmmPQL function within the MASS package of the R statistical software (version 2.11). Institutional review boards of Stanford University and VA Palo Alto Health Care System approved all aspects of this study.

3. Results

3.1. Overview

In FY2008 at 128 VHA facilities, 35,240 patients were diagnosed with an opioid use disorder. Of those, 9610 (27.3%) received OAT of whom 7828 (22.2% of total) received OAT in a specialized licensed clinic (C-OAT) and 1782 (5.1% of total) received office-based OAT (O-OAT) with buprenorphine. Of the 7828 C-OAT patients, 6083