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# The Prescription of Addiction Medications After Implementation of Chronic Care Management for Substance Dependence in Primary Care



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#### ABSTRACT

People with addictive disorders commonly do not receive efficacious medications. Chronic care management (CCM) is designed to facilitate delivery of effective therapies. Using data from the CCM group in a trial testing its effectiveness for addiction (N=282), we examined factors associated with the prescription of addiction medications. Among participants with alcohol dependence, 17% (95% CI 12.0–22.1%) were prescribed alcohol dependence medications. Among those with drug dependence, 9% (95% CI 5.5–12.6%) were prescribed drug dependence medications. Among those with opioids as a substance of choice, 15% (95% CI 9.3–20.9%) were prescribed opioid agonist therapy. In contrast, psychiatric medications were prescribed to 64% (95% CI 58.2–69.4%). Absence of co-morbid drug dependence was associated with prescription of alcohol dependence medications. Lower alcohol addiction severity and recent opioid use were associated with prescription of drug dependence medications. Better understanding of infrequent prescription of addiction medications, despite a supportive clinical setting, might inform optimal approaches to delivering addiction medications.

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#### 1. Introduction

Medications are effective tools in the treatment of substance use disorders. Naltrexone and acamprosate have been shown to reduce shortterm alcohol use in those with alcohol use disorders (Jonas et al., 2014). Methadone and buprenorphine have been shown to reduce opioid use in those with opioid use disorders (Mattick, Breen, Kimber, & Davoli, 2009). Additionally, methadone has been shown to reduce mortality (Degenhardt, Bucello, Mathers, et al., 2011) and HIV transmission (MacArthur, Minozzi, Martin, et al., 2012) in those with opioid use disorders. Despite their effectiveness for alcohol and opioid use disorders, these treatments remain underutilized by patients and underprescribed by clinicians (Harris et al., 2012; Knudsen, Abraham, Johnson, & Roman, 2009). In addition some substance use disorders do not have efficacious medication treatments (e.g. cocaine use disorders). In contrast, use of medications in other psychiatric illnesses is common (Pincus et al., 1998; Wu, Wang, Katz, & Farley, 2013). Potential reasons for underutilization of addiction medications include patient and clinician-related barriers, such as doubts about treatment effectiveness by both clinicians and patients, clinicians' lack of knowledge or comfort

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in delivering the treatment, differing philosophies about the role of addiction medications in assisting addiction recovery, stigma, and patients' reluctance to take them (Friedmann & Schwartz, 2012; Garner, 2009; Roman, Abrahama, & Knudsen, 2011). Systems-related barriers for underutilization may include separate and uncoordinated systems of medical and addiction care, limitations in access to care, lack of institutional support, and inadequate administrative and personnel infrastructures (McLellan & Meyers, 2004; Samet, Friedmann, & Saitz, 2001; Walley et al., 2008).

Chronic care management (CCM) is a clinical approach designed for use in primary care to increase the delivery of effective therapies (Wagner, Austin, & Von Korff, 1996). By providing coordinated, patient-centered care delivered by a multidisciplinary team, CCM may reduce many of the systems and clinician-related barriers to the delivery of addiction medications to patients. Indeed, in the Addiction Health Evaluation And Disease Management (AHEAD) trial, a randomized clinical trial that tested the effectiveness of CCM for substance dependence in a primary care setting, participants receiving CCM had an increased use of addiction medications compared to those receiving usual primary care (Saitz et al., 2013). Twenty-one percent of participants receiving CCM compared to 15% of those in the control group were prescribed an addiction medication at the end of the AHEAD trial, a statistically significant difference. This was a secondary outcome of the trial. There was no statistically significant difference between the CCM intervention

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group and control in the trial's primary outcome of abstinence from opioids, stimulants or heavy drinking. In a study that examined the feasibility of performance measures for addiction pharmacotherapy using administrative data from multiple health systems, the authors found that the proportion of individuals receiving addiction pharmacotherapy varied between systems due to differences in both the number of people receiving medication and the number of people with an addiction diagnosis (Thomas et al., 2013). Thus a clinical trial such as the AHEAD trial in which only people with substance dependence were enrolled may provide a better estimate of the rate of prescribing of addiction medications in a clinical setting ideally organized to facilitate the prescription of such treatment.

Previous studies in non-CCM settings have found that receipt of addiction medications varies by patient characteristics. One study reported that being female, less than age 55, not having a co-morbid drug diagnosis, having a co-morbid psychiatric diagnosis and having specialty addiction care contact were all positive predictors of receiving an alcohol medication in the Veterans Health Administration (VHA) (Harris et al., 2012). Both male and female gender (in conflicting studies), being older than 25, not being African-American, and not having a co-morbid psychiatric disorder were factors associated with receiving opioid agonist therapies (OAT) in the VHA and in a Medicaid population (Oliva, Harris, Trafton, & Gordon, 2012; Stein et al., 2012). Thus patient demographic characteristics as well as the presence or absence of a co-morbid psychiatric disorder appear to be associated with the receipt of addiction medications in these populations. Notably, those with a co-morbid drug diagnosis were less likely to receive alcohol medications in the Harris study. Due to its opioid receptor antagonism, naltrexone may not be recommended if a patient is taking or considering taking OAT. Similarly, prescribing OAT in patients who are actively drinking may introduce the risk of oversedation and overdose and thus may not be recommended. In this study, we aimed to examine the association between patient characteristics and the receipt of addiction medications in the CCM intervention arm of the AHEAD trial. Because little is known about patient characteristics that are associated with receipt of addiction medications in a CCM setting, where many clinician-level barriers to the delivery of medications are addressed, identifying these patient characteristics may help elucidate unrecognized and suspected barriers. In this secondary analysis of the AHEAD trial, we aimed to (1) further describe the frequency of prescription of addiction and psychiatric medications in the group randomly assigned to receive CCM and (2) examine patient factors associated with prescription of addiction medications at follow-up in the context of this CCM clinic for substance dependence.

#### 2. Material and methods

#### 2.1. Study participants

This is an exploratory analysis of adults with substance dependence who enrolled in the Addiction Health Evaluation And Disease Management (AHEAD) trial, a randomized clinical trial that tested the effectiveness of chronic care management for substance dependence in a primary care setting. The study design of the AHEAD trial has been described previously (Saitz et al., 2013). The study sample for the current analysis includes only individuals who were randomly assigned to attend the intervention tested in the AHEAD trial. The control participants were excluded from this analysis because this study focuses on the magnitude and predictors of addiction medication prescription within the context of a CCM clinical approach.

Participants in the AHEAD trial were recruited primarily from a residential detoxification unit (73%), as well as by self and physician referral from Boston Medical Center (BMC) (9%), and through bus and newspaper advertisements (16%). Participants were adults with alcohol and/or drug dependence as determined by the Composite International Diagnostic Interview–Short Form (CIDI-SF) (Kessler, Andrews, Mroczek,

Ustun, & Wittchen, 1998) who were willing to establish or continue primary medical care at BMC who had heavy drinking in the past month for those with alcohol dependence or past 30 day drug use (psychostimulants or opioids) for those with drug dependence. Heavy drinking was defined as the number of drinks in an average week in the past month:  $\geq 4$  standard drinks for women and  $\geq 5$  standard drinks for men at least twice, or  $\geq 15$  drinks per week for women or  $\geq 22$  drinks per week for men. Patients who were pregnant, had cognitive impairment (score of less than 21 of 30 on the Mini-Mental State Examination), were not fluent in English or Spanish or were unable to provide contact information for tracking purposes were excluded. Interest in substance abuse treatment, addiction pharmacotherapy, or chronic care management was not an eligibility requirement.

Of the 2029 persons screened for the AHEAD trial, 1374 were excluded. The most common reasons for exclusion were being unwilling to establish or continue primary care at BMC (600 people), cognitive impairment (389), not meeting alcohol or drug criteria (130), or being unwilling or unable to attend the first clinic visit (118). Eighty-five people declined to be in the study after being deemed eligible. Of the 563 people randomized, 282 were assigned to receive CCM.

Individuals who met eligibility criteria and agreed to participate in the AHEAD trial provided written informed consent prior to enrollment and received compensation for completing study research procedures. Study participants were neither encouraged nor discouraged by research assistants to return to the clinic and no compensation was provided for attendance. The Institutional Review Board at Boston University Medical Campus approved this study, and a Certificate of Confidentiality was obtained from the NIH to further ensure participant confidentiality.

#### 2.2. Chronic Care Management Clinic Protocol

The CCM clinic aimed to provide CCM for alcohol and drug dependent individuals in a primary care setting. It provided longitudinal care and coordinated specialty medical, psychiatric and addiction care with primary care. It included clinical case management, active follow-up, referrals and patient advocacy. Tailored treatment plans were developed collaboratively with the involvement of participants, their primary care physician and other relevant clinicians. A shared electronic medical record with specifically created forms of standardized addiction-related assessments was utilized. The clinic staff was composed of a multidisciplinary team separate from any primary care staff that included a nurse clinical care manager, a social worker, two internists and a psychiatrist. The nurse clinical care manager and social worker worked full time (nurse available by pager 24 hours/day), and physicians worked in the clinic two half-days per week. All physicians were waivered to prescribe buprenorphine and received training in motivational interviewing.

At the initial clinic encounter, addiction, medical, social, and psychological assessments were conducted by clinicians. These results were separate from assessments conducted by research associates for the AHEAD trial. The latter assessments were made available for review by clinical staff to avoid repetition for participants. After assessment, all participants were offered motivational enhancement therapy (4 sessions with the social worker), relapse prevention counseling (all staff at each contact), and referral (as appropriate and clinically indicated) to specialty addiction treatment including methadone maintenance treatment and mutual help groups. Treatment plans were discussed during weekly treatment team meetings. Primary care physicians did not participate in treatment team meetings but were contacted separately by CCM staff through messages via the electronic medical record and communication in-person and by phone. Continuing care was provided during follow-up. This consisted of nurse clinical care manager and social work contacts, ongoing facilitated referrals, and availability for drop-in care. Participants were contacted proactively for reengagement when loss to follow-up occurred for any reason. Abstinence

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