Effects of a multifaceted implementation intervention to increase utilization of pharmacological treatments for alcohol use disorders in the US Veterans Health Administration☆

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ABSTRACT

Over 16 million Americans meet diagnostic criteria for alcohol use disorder (AUD), but only 7.8% of them receive formal treatment each year. Safe and effective pharmacological treatments for AUD exist; however, they are rarely prescribed. Therefore, we developed and pilot tested a multifaceted implementation intervention to improve consideration and receipt of effective pharmacologic treatments for AUD, focusing on primary care settings where patients have the most frequent contact with healthcare systems. The intervention included training of local providers to serve as champions and a website for primary care providers that included educational materials, a case-finding dashboard, and contact information for local and national clinical experts. We also mailed patients educational material about treatment options. The intervention was implemented at three large facilities of the Veterans Health Administration (VHA). An interrupted time series design, analyzed with segmented logistic regression, was used to evaluate the intervention's effects. The odds of a patient with AUD receiving one of the AUD medications was increasing throughout the pre-implementation period, and the rate of change (slope) increased significantly in the implementation period. Translating these numbers into percentages, at baseline 2.9% of patients filled a prescription for an AUD medication within 30 days of a primary care visit. This increased to 3.8% by the end of the pre-implementation period (increasing 0.037% per month), and increased to 5.2% by the end of the implementation period (increasing 0.142% per month). However, the intervention effect was not significant when control sites were added, suggesting that improvement may have been driven by secular trends rather than solely by this intervention. Although the intervention was feasible, it was not effective. Continued analysis of process and implementation data including qualitative interviews with key stakeholders, may elucidate the reasons this intervention was not successful and ways to strengthen its effects.

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1. Introduction

In 2013, 16.6 million adults in the United States (US) met diagnostic criteria for alcohol use disorder (AUD), yet only 7.8% received any formal treatment (National Institute on Alcohol Abuse and Alcoholism, 2015). In contrast, 40 to 50% of US adults with major depression receive medication or psychosocial treatment in any given year (Shim, Baltrus, Ye, & Rust, 2011). Even within the Veterans Health Administration (VHA), the largest integrated healthcare system in the US, only 32% of

patients clinically diagnosed with an AUD received specialty addiction treatment in one of its 220 specialty addiction programs. Thus, developing strategies to improve access to and engagement in effective treatments for AUD is a national healthcare priority (Ducharme, Chandler, & Harris, 2016).

Three medications are US Federal Drug Administration (FDA)-approved for the treatment of AUD (oral and injectable naltrexone, acamprosate, and disulfiram), and one without FDA-approval for AUD (topiramate) has meta-analytic support of effectiveness. These medications have been found to be effective in improving symptoms and functioning in patients with AUD (Blodgett, Del Re, Maisel, & Finney, 2014; Jonas et al., 2014; Magill & Ray, 2009; Maisel, Blodgett, Wilbourne, Humphreys, & Finney, 2013; Riper et al., 2014), and can be prescribed and managed in diverse clinical settings including primary care (Blodgett et al., 2014; Jonas et al., 2014; Maisel et al., 2013). Allowing patients more options regarding the type and location of their AUD treatment is consistent with principles of patient-centered care and has the potential to increase access and treatment engagement. However, among both patients and prescribers in the US, knowledge and utilization of these medications to treat AUD is inadequate given the prevalence and morbidity associated with AUD (Ducharme, Knudsen, & Roman, 2006; Harris et al., 2013; Harris, Kivlahan, Bowe, & Humphreys, 2010; Knudsen & Roman, 2016; Mark, Kassed, Vandivort-Warren, Levit, & Kranzler, 2009; Rubinsky, Chen, Batki, Williams, & Harris, 2015).

In the VHA, low and variable utilization persists, even with all four medications being on the national formulary, supported by VHA clinical practice guidelines and policies, and subject to near real time monitoring (Department of Veterans Affairs, 2008; The Management of Substance Use Disorders Working Group, 2009; Trafton et al., 2013). Among VHA patients diagnosed with AUD in fiscal year 2013 (FY13), only 5.8% received these medications overall and only 9.8% of patients seeking treatment in one of VHA's specialty addiction treatment programs received them (Harris et al., 2010; Harris et al., 2012). Not only is the overall rate of medication receipt low, substantial facility-level variability exists, ranging from 0% to 21% among Veterans who received care in addiction clinics across 151 facilities in FY13 (Harris et al., 2010; Harris et al., 2012). Low prescribing rates and significant variation between facilities suggests that significant gaps exist in access to and active consideration of these medications.

Prior research using provider interviews designed to understand drivers of low and variable rates of pharmacotherapy for AUD within VHA has found the top barriers to consideration of pharmacotherapy for AUD include: 1) *perceived* low patient demand, 2) lack of skills or knowledge on the part of the provider, and 3) lack of provider confidence in the effectiveness of the medications (Harris et al., 2013). The study also found the strategies rated as most promising for increasing consideration and use of pharmacotherapy for AUD were: 1) educating prescribing providers about existing medications, 2) increasing physician involvement in AUD treatment, and 3) educating patients about existing medications. A review of barriers and perceptions of potential strategies to improve pharmacotherapy prescribing rates for AUD reported that focus groups and interviews with general practitioners, psychiatrists and patients have consistently identified inadequate training (providers), lack of knowledge (providers and patients) and lack of awareness (patients) as the most frequently reported barriers to implementation (Oliva & Harris, 2014). In contrast to providers perceptions of low patient demand, an evaluation of the VHA mental health treatment services found that of Veterans offered medications for AUD, over 80% accepted and filled the prescription (Watkins et al., 2011), suggesting that patient education and activation might prove an important and untested implementation strategy.

To address this substantial and persistent quality gap, we designed and pilot tested a multifaceted implementation intervention in three large VHA facilities aimed at integrating pharmacological AUD treatment options into primary care settings, where most patients interact with the healthcare system. The intervention targeted several stakeholder groups with tailored strategies based on prior research identifying barriers to implementation of AUD pharmacotherapy (Harris et al., 2013; Oliva & Harris, 2014) and informed by the Theory of Planned Behavior (Azjen, 1991), described in more detail in this study's published protocol (Hagedorn et al., 2016). Also, feasibility and scalability were primary concerns in designing the intervention. As summarized in Table 1, addiction treatment providers and Primary Care Mental Health Integration (PCMHI) clinicians were trained as local implementation/clinical champions and received ongoing external facilitation by national experts in implementation and AUD pharmacological treatments. Primary care providers received access to a website which included provider and patient educational materials, a dashboard identifying patients with AUD on their caseloads, and email notification when a patient on their dashboard had an upcoming appointment. The website also included email and phone contact information for their local champions and a national addiction psychiatry expert who was part of the research team. They were encouraged to reach out to these experts at any time for information or advice related to the prescribing of medications for AUD. Patients with AUD diagnoses were mailed educational information about pharmacologic and other treatment options just prior to a scheduled primary care visit. In this paper, we report on the intervention effects on receipt of medications for AUD.

2. Materials and methods

2.1.1. This project received approval from the VHA Central Institutional Review Board

The Board determined that the study activities of champions and providers were exempt from a requirement for consent because they were process improvement activities, and that patients were not required to complete informed consent as there was no contact between study staff and identified patients and all treatment decisions were made by the Veteran's primary care provider. All champions, providers, and patients who took part in the qualitative interviews provided informed consent to do so.

2.1.2. Selection and recruitment of sites are described in detail in the published protocol (Hagedorn et al., 2016)

Briefly, three large, geographically diverse, VHA medical centers were selected and recruited based on availability of SUD specialty care providers and PCMHI providers interested in training as local clinical champions, as well as endorsement of the project from the Chief of Primary Care. We also sought sites where baseline adoption of AUD medications was neither extremely high nor low, in order to maximize generalizability to the greatest number of future sites. As presented in Fig. 1, formative developmental evaluation for the intervention, which included interviewing of champions, primary care providers and patients with AUD at each site, started in November 2014, followed by an in-person 2-day training of local champions in February 2015, and release of the provider website and initiation of patient mailings in May 2015, which was considered the beginning of the implementation phase for evaluation purposes.

2.2. Participants and intervention components

Participants in this project were local champions, primary care providers, and patients (see Table 1). In each of the three facilities, two individuals were identified to serve as local clinical and implementation champions - one addiction psychiatrist and one PCMHI provider. The addiction psychiatrist champions were identified prior to the start of the project based on expressed interest in participation. Once the project started, the addiction psychiatrist champions were asked to identify a provider in their local PCMHI service that would also be willing to serve as a champion. During the implementation period, champions were responsible for providing educational opportunities regarding