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Medications for opioid use disorder in the Department of Veterans Affairs (VA) health care system: Historical perspective, lessons learned, and next steps

Jessica J. Wyse, PhD, MPP[a,d], **Adam J. Gordon, MD, MPH**[b,c], **Steven K. Dobscha, MD**[a,d], **Benjamin J. Morasco, PhD**[a,d], **Elizabeth Tiffany, MD**[a,d], **Karen Drexler, MD**[e,f,g], **Friedhelm Sandbrink, MD**[h,i,j], **Travis I. Lovejoy, PhD, MPH**[a,d]

[a]Portland State University, VA Portland Health Care System, Portland, Oregon, USA;

[b]VA Salt Lake City Health Care System, Salt Lake City, Utah, USA;

[c]University of Utah, Salt Lake City, Utah, USA;

[d]Oregon Health Science University, Portland, Oregon, USA;

[e]Atlanta VA Medical Center, Decatur, Gerogia, USA;

[f]Office of Mental Health and Suicide Prevention, Veterans Health Administration, Washington, DC, USA;

[g]Emory University School of Medicine, Atlanta, Georgia, USA;

[h]VA Medical Center Washington, DC, USA;

[i]Specialty Care Services, Veterans Health Administration, Washington, DC, USA;

[j]George Washington University, Washington, DC, USA

Abstract

The US Department of Veterans Affairs (VA), the largest health care system in the United States, has been confronted with the health care consequences of opioid disorder (OUD). Increasing access to quality OUD treatment, including pharmacotherapy, is a priority for the VA. We examine the history of medications (e.g., methadone, buprenorphine, injectable naltrexone) used in the treatment of OUD within VA, document early and ongoing efforts to increase access and build capacity, primarily through the use of buprenorphine, and summarize research examining barriers and facilitators to prescribing and medication receipt. We find that there has been a slow but steady increase in the use of medications for OUD and, despite systemwide mandates and directives, uneven uptake across VA facilities and within patient subpopulations, including some of those

✉**CONTACT** Jessica J. Wyse, PhD, MPP Jessica.wyse@va.gov VA Portland Health Care System, 3710 SW US Veterans Hospital Road, Portland, OR 97239, USA.

Author contributions

Drs. Wyse, Gordon, Dobscha, Morasco, Tiffany, Drexler, Sandbrink, and Lovejoy all contributed to the paper's conceptualization. Dr. Wyse drafted the manuscript. Drs. Drexler, Gordon, Sandbrink, and Tiffany contributed key data. All authors contributed to critical revision of the manuscript.

most vulnerable. We conclude with recommendations intended to support the greater use of medication for OUD in the future, both within VA as well as other large health care systems.

Keywords

Buprenorphine; opioid use disorder; pharmacotherapy; veterans

Introduction

Among veterans receiving health care from the US Department of Veterans Affairs, Veterans Health Administration (VA), there has been a sharp rise in the number diagnosed with opioid use disorder (OUD), such that in 2003, 25,031 veterans had a diagnosis of OUD, whereas by 2017 this number had risen to 69,142.[1,2] VA patients also face heightened risk of opioid-related adverse events, including overdose and death, relative to the general population.[3,4] In response, VA has undertaken substantial efforts to both decrease new opioid prescribing and extend essential treatments to vulnerable patients struggling with OUD.[5,6,19]

As the largest direct provider of substance use disorder treatment nationally, VA has taken proactive steps to increase access to medications indicated for OUD, which is recognized as an essential component of evidence-based care.[7–9] Although VA has achieved notable successes, like other systems of care, uptake has been both slow and uneven. Focusing specifically on the decade following buprenorphine's addition to the VA formulary, we describe the history of OUD medications in VA, successes achieved, and challenges remaining and conclude with lessons learned and recommendations to improve the access and quality of pharmacologic care for patients with OUD.

VA health care system

VA is the largest health care system in the United States, serving more than 9 million enrolled veterans each year and employing more than 306,000 full-time health care professionals and staff. Care is provided at 1243 facilities, including 170 VA medical centers and 950 community-based outpatient clinics (CBOCs). Medical centers provide traditional hospital based services, (e.g., surgery, pharmacy, and critical care) as well as medical and surgical specialty care (e.g., oncology, dental and geriatrics), whereas CBOCs provide common outpatient services, such as health and wellness visits, in a setting closer to patients' home communities.[6]

Medications for OUD in the VA

In the late 1960s and early 1970s, a growing share of service members returning from Vietnam were found to be struggling with drug dependency, particularly to heroin. In response, VA formed the Alcohol and Drug Dependence Service to plan and monitor specialized units to treat veterans who were dependent on opioids. From 1970 to 1971, VA established 5 drug dependency treatment centers to pilot various standard and experimental treatments for heroin addiction, one of which was methadone maintenance. By 1972, the year in which methadone was first approved by the Food and Drug Administration (FDA) to

treat heroin use disorder, VA had established 44 treatment centers across the United States.[10] By 1973, 58% of VA patients diagnosed with OUD who were receiving outpatient care were being treated with methadone.[11] The drug dependency treatment centers were the VA's version of opioid treatment programs, federally licensed programs that provided formal nonpharmacologic and pharmacologic treatments for OUD. Like opioid treatment programs (OTPs) outside of the VA, VA Drug Dependence Treatment Centers were accessible only to those able to visit the facility daily, for daily dosing requirements, and not subject to geographic limitations.

In the 3 decades following, the number of VA facilities offering methadone in OTPs first declined and then increased somewhat as the VA began contracting with outside facilities. By 2008, just 28 of 128 VA medical centers had an on-site opioid treatment program, and 6 facilities offered treatment through off-site, contracted community OTPs.[13] In 2011, VA maintained operation of 28 OTPs while 25 VA facilities contracted with community-based OTPs.[14] As of 2014, 39 facilities offered access to OTPs outside of the VA; some of these facilities also hosted on-site OTPs and used external providers to address excess demand or geographic barriers. Although the current number of facilities offering off-site access to OTPs is not yet known, as of 2018 the VA operated 32 OTPs across the nation. Minimal growth in the number of OTPs within the VA over time likely reflects the intensive staffing, infrastructure, and regulatory requirements needed to initiate and maintain OTPs.

There was little change in the medications available to treat OUD until the early 2000s, when FDA approved sublingual buprenorphine in 2002. In 2003, buprenorphine products were introduced within VA as "nonformulary" medications for the treatment of OUD, with Criteria for Non-formulary use established by VA's Pharmacy Benefits Management Service.[15] Non-formulary prescribing required that providers submit a nonformulary drug request, which was evaluated on a case-by-case basis by a clinical pharmacy specialist. In the 3 years following this introduction, the proportion of patients diagnosed with OUD who received at least 1 sublingual buprenorphine prescription over the course of a year increased from 0.2% to 2.8%, while the number of VA physicians prescribing sublingual buprenorphine also increased, from 14 to 170.[1] Sublingual buprenorphine was granted formulary status in 2006, assuring that it was available as a covered pharmacy benefit to all VA patients diagnosed with OUD. By fiscal year 2010, 118 out of 140 VA facilities (84%) had at least 1 buprenorphine prescriber.[16] By fiscal year 2016, 14,460 patients were treated with buprenorphine for OUD, and the number of VA prescribers had increased markedly to 1150.

More recent additions of medications available to treat OUD include injectable naltrexone (XRN), buprenorphine implant, and injectable buprenorphine. In 2014, 4 years following FDA approval, the opioid antagonist XRN was added to the VA formulary as a treatment for OUD.[17] Buprenorphine implant was FDA approved in 2016, whereas injectable buprenorphine was approved in 2017, and this formulation is currently being evaluated for formulary inclusion.

Increasing access and building capacity

In the decade following the inclusion of buprenorphine into the VA formulary (i.e., since 2006), and responding to the sharp rise in number of patients diagnosed with OUD, VA utilized diverse policy levers and initiatives to expand access and build capacity for medication prescribing, including educational and quality improvement initiatives, targeted resources, national policy, and "big data" initiatives.

Educational and quality improvement initiatives

In 2006, the VA Office of Mental Health Services sponsored two 8-hour trainings for physicians designed to increase the number of physicians licensed to prescribe buprenorphine. Physicians were provided free registration and transportation to attend these DATA2000 credentialing sessions. Yet, of the 29 physicians who attended and trained, just 2 were prescribing 9 months later.[18] In 2007, VA introduced the Buprenorphine in the VA Initiative (BIV), a national consult service, the aim of which was to improve the implementation, care processes, and patient outcomes associated with buprenorphine.[19] In addition to consultation services, products have included monthly webinar trainings, monthly newsletters, one-on-one peer to peer consultation, listserv engagement, and monthly monitoring of buprenorphine care. Finally, VA unrolled an "academic detailing" program in 2010, in which 285 pharmacy specialists trained in social marketing and motivational interviewing take on high-priority pharmaceutical education campaigns, visiting local clinics to provide best practice information and promotional materials to providers.[20] An academic detailing campaign specifically targeting the treatment of OUD, and encouraging providers to prescribe medications for OUD, was initiated in 2017.

Targeted resources

In 2007, VA also targeted facilities that had no access to an opioid treatment program, but a high need for care, awarding 15 facilities each with $300,000 in funds to establish infrastructure and processes needed to prescribe buprenorphine.[21]

National policy and clinical guidelines

VA has also pursued national policy and updated clinical guidelines to expand the use of medications. In 2008, VA issued a policy document, *VHA Handbook 1160.01*, detailing "minimal clinical requirements" for mental health services to be provided within VA. One such requirement was that medication be made available for the treatment of alcohol, opioid, and tobacco use disorder. For opioid use disorder specifically, methadone and buprenorphine were to be considered in treatment planning and made available to all patients diagnosed with DSM-IV (*Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*) opioid dependence (or now DSM-5 [DSM, 5th edition] opioid use disorder). Among patients for whom agonist medications were contraindicated or not acceptable, antagonist medications (e.g., naltrexone) were to be made available. Primary care clinics were also encouraged to provide medication paired with psychosocial treatments either on-site or via telemedicine.[22] This was the first time that medication was specifically mentioned as a clinical *requirement* for veterans receiving OUD treatment. In addition, VA/DoD (Department of Defense) Clinical Practice Guidelines for the Treatment of Substance Use

Disorders (CPG SUD), published in 2009 and updated in 2015, strongly recommended either sublingual buprenorphine or methadone as a first-line treatment for patients diagnosed with OUD.[23,24] The 2015 CPG SUD was targeted to office-based primary care providers, specifically encouraging buprenorphine use within these environments.

Big data tools

Leveraging the comprehensive electronic health record data available for all patients, VA has implemented sophisticated electronic tools to track and encourage prescribing. Since 2010, the Mental Health Information System (MHIS) has tracked the percentage of patients diagnosed with OUD who are prescribed medications for OUD at the patient, provider, and facility levels.[19,21] VA also initiated the Psychotropic Drug Safety Initiative (PDSI) in 2013 that includes a "dashboard" identifying patients whose diagnoses and/or prescribed medications indicate a need for clinical review and possible change. One measure tracked is the share of patients diagnosed with OUD who are receiving indicated medications. These data are aggregated at the individual facility and at regional and national levels and published internally to track change over time and allow for comparison between facility, regional, and national averages. Recently, the VA's Academic Detailing Service has developed a buprenorphine dashboard to assist providers in monitoring their patients on buprenorphine. Among other items, the dashboard provides information regarding latest urine drug screen results, latest buprenorphine prescription and dose, and latest prescription drug monitoring program inquiry.

Trends over time

These efforts have yielded substantial improvements. Of all VA patients diagnosed with OUD in 2004, 25.1% received a medication to treat that disorder.[16] By 2012, 33% of VA patients diagnosed with OUD received indicated medications, 18% with methadone, 17% with buprenorphine, and 3% with some form of naltrexone.[25] Finally, in 2017, 34.8% of patients diagnosed with OUD had received medication for that diagnosis, 33.9% with either buprenorphine or methadone, and .9% with injectable naltrexone.[2]

And yet, the slow but steady increase in overall prescribing over time obscures wide variability in rates of prescribing across VA facilities, with some facilities treating the majority of patients with OUD with medication and others rarely using these evidence-based treatments. In 2008, facility-level rates of prescribing for those diagnosed with OUD ranged from 0% to 66%, with approximately half of facilities accounting for the substantial majority of patients treated with indicated medications. Further, facilities with on-site OTPs offered medication to patients with OUD at a rate of 42%, compared with facilities offering only office-based buprenorphine prescribing, where rates of prescribing were 18%.[13] As of 2008, 22% of VA patients diagnosed with OUD received medication through a licensed OTP while 5% received buprenorphine in an office-based setting, namely, primary care or mental health.[13] By 2012, wide facility-level variability persisted, with rates of prescribing across VA facilities ranging from 1% to 68% of veterans diagnosed with OUD treated with medication.[25]

Correlates of pharmacotherapy receipt

Recent studies of VA patients diagnosed with OUD have identified sociodemographic and clinical characteristics associated with the likelihood of receiving medication indicated for OUD, as well as the type of medication prescribed. Patient-level factors found to decrease the likelihood of receiving indicated medication include female gender, African American race, older age, the absence of a mental health diagnosis, rural residence, homeless status, and disability due to military service.[25,27] Further, older age, urban residence, and African American race are associated with lower odds of receiving buprenorphine relative to methadone.[28] Finally, African American race, overall medical comorbidity, and frequent emergency room visits were associated with a shorter duration of retention in buprenorphine treatment.[29]

Barriers and facilitators to prescribing in VA

Despite institutional support and evidence of clinical efficacy, medication for OUD remains underutilized within VA. Research has examined VA providers' perceptions of the barriers and facilitators to (a) buprenorphine prescribing and (b) the treatment of substance use disorders generally, including medication prescribing in non–specialty care settings.[21,30] These studies identified *resource*, *demand*, and *philosophical factors* influencing prescribing, and *implementation strategies* linked with successful outcomes. Among 17 facilities with a high burden of OUD but no on-site opioid treatment program, interviews with 62 staff identified administrative priority, provider knowledge and time, bureaucratic and pharmacy constraints, and the availability of a prescriber as important resource factors determining prescribing.[21] In 23 interviews with staff from 6 VHA primary care–mental health integrated clinics, respondents reported resource factors as a major barrier, including feeling unprepared to offer such services, lack of adequate staffing and space, and the need for additional staff training.[30] Demand factors identified as important determinants of prescribing included patient and provider interest and perceived patient need, whereas philosophical factors included the presence or absence of stigma related to medication for OUD and/or OUD more generally, a harm-reduction orientation among providers, and an absence of concern regarding medication diversion.[21] In the integrated clinical setting, one philosophical factor mentioned was the perception that SUD treatment was beyond the scope of integrated clinics' work. Respondents' thoughts on successful implementation strategies highlighted the importance of an organizational leader/champion, and organizing either buprenorphine care discussions or a pilot project prior to roll-out, whereas staff from integrated clinics expressed the need for a model—a structured implementation strategy—tailored specifically to the integrated clinical setting that could guide clinical practice and processes.

A related literature examining barriers and facilitators to medications utilized for alcohol use disorder (AUD) within VA has identified many of the same barriers and facilitators to prescribing, citing demand factors (patient and provider), resource factors (formulary restrictions, lack of provider skills or knowledge, staffing), and philosophical factors (medication beliefs, alcohol-related stigma) as barriers.[31,32] However, an evidence-based, multifaceted implementation strategy designed to overcome these barriers was not found to

be effective. The authors suggest that the effectiveness of the intervention may have been limited by the low level of effort required of primary care physicians, the limited financial resources associated with it, and an insufficient understanding of patient knowledge and preferences regarding AUD medication.[33]

Where should the VA go next?

VA has been at the forefront of integrating medication into the treatment of OUD. VA has utilized multiple policy levers, including national policy, directed funding, educational and quality improvement initiatives, and data monitoring systems, that have collectively led to a greater use of medication for the treatment of OUD even as the number of patients diagnosed with OUD has expanded considerably. And yet substantial challenges persist: indicated medications remain underutilized, facilities continue to vary widely in their rates of prescribing, patients' demographic and social status characteristics are correlated with medication receipt, and VA's capacity to supply methadone has not risen to meet patient demand. Overcoming these challenges will require further investments, in both research and resources.

- Research should identify the institutional factors that contribute to variance in facilities' rates of medication usage, and the strategies and mechanisms through which some facilities have been able to achieve greater rates of prescribing over time. Facilities seeking to build capacity could then leverage the lessons learned from other facilities that had faced similar challenges. Implementation should also be guided by established models of care delivery (e.g., the "hub and spoke model"), ensuring that each system isn't reinventing the wheel.[34]
- Although medications for OUD are reaching more veterans, continued expansion will likely require new approaches to care delivery. Increasing use of telehealth could help bridge the care gap for rural veterans and veterans receiving care in facilities with fewer resources, such as community-based outpatient clinics (CBOCs). The new VA Video Connect (VVC) program, which allows veterans to virtually "attend" a health care visit via their smart phone, tablet, or home computer, holds particular promise.[35] Research examining mental health care delivered remotely has found that it can be as effective as that delivered in person,[36,37] suggesting that telehealth approaches are a viable option within the VA. Increasing prescribing within the context of primary care also holds potential to greatly expand access to medications for OUD. Research should investigate how some VA facilities have been able to overcome the documented philosophical, resource, and structural impediments to integrating medication into primary care structures and processes to help guide other facilities' implementation efforts.
- Further research is needed to understand the sources of disparities in the use of medication for OUD treatment. Such research should explore how institutional setting and clinician factors influence and limit care options while also incorporating the patient's voice, to identify how personal beliefs and experiences shape patients' care choices. Research targeted to subpopulations at

higher risk of not receiving indicated medications, such as homeless or justice-involved veterans, is also needed to inform the design of interventions and programs to better address these patients' needs. Such research is also needed to understand patient barriers to retention in treatment, and how to overcome these barriers through program design and interventions.

- Methadone treatment capacity within VA has not kept up with demand, with methadone increasingly provided by off-site contracted OTPs. Yet, whether this care matches the quality provided within VA, or meets the unique needs of veteran patients, remains unknown. As VA continues to build contract relationships with outside providers, understanding patients' experiences with this care will become increasingly important.
- Although some of the barriers identified by research have been targeted by VA initiatives (e.g., the Buprenorphine in the VA Initiative, Psychotropic Drug Safety Initiative, Academic Detailing), others have not (patient demand, resource constraints in non–substance use disorder specialty settings). Thus, new initiatives should explicitly target these identified barriers through existing program infrastructure or new initiatives. Education of providers may not be enough to change clinical practice; innovative incentives could be provided to encourage buprenorphine provision. The new ability of advance practice nurse practitioners and physician assistants to prescribe buprenorphine, granted in the Comprehensive Addiction and Recovery Act (CARA), may also encourage more VA buprenorphine prescribing.[38]

Relevance to care outside of the VA

The VA is a leader in the use of medication for OUD. For instance, in 2016, nearly three quarters of VA facilities offering outpatient treatment services for substance use disorders offered some type of medication for OUD, whereas this was true of just over one quarter of private-for-profit programs—the facility-type next most likely to offer medication.[39] As a medical system, VA may have been better positioned to initiate prescribing than non-VA treatment programs, which have historically operated independently of the medical system. Moving forward, other systems seeking to incorporate or expand their use of medications for OUD treatment should consider the strategies VA has pursued to increase prescribing over time, as well as the design of care processes that have made this increase possible.

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