PERSPECTIVES







A Call to Action: Integration of Buprenorphine Prescribing Into the Care of Persons With Human Immunodeficiency Virus and Opioid Use Disorder

A. Wendy Fujita, 1,0 J. Deanna Wilson, 2 and Amy J. Kennedy3

¹Division of Infectious Diseases, Emory University Department of Medicine, Atlanta, Georgia, USA, ²Division of General Internal Medicine, University of Pittsburgh, Pennsylvania, USA, and ³Division of General Internal Medicine, University of Washington School of Medicine, VA Puget Sound Healthcare System, Seattle, Washington, USA

During the coronavirus disease 2019 (COVID-19) pandemic, we also experienced a worsening opioid overdose epidemic. Untreated opioid use disorder (OUD) in persons with human immunodeficiency virus (HIV) is associated with worse HIV-related outcomes. Buprenorphine is a safe, evidence-based medication for OUD and is effective in reducing opioid craving and overdose and improving outcomes along the HIV care continuum. Despite the longstanding evidence supporting the benefits of buprenorphine, there remains an implementation gap in the uptake of buprenorphine prescribing in HIV care settings. To improve integration of OUD care and HIV primary care, we recommend (1) all HIV clinicians obtain a buprenorphine waiver, (2) teaching on OUD should be integrated into infectious diseases and HIV continuing medical education, and (3) previously validated models of integrated care should be leveraged to urgently expand access to buprenorphine for persons with HIV and OUD.

Keywords. buprenorphine; HIV; opioid use disorder; substance use disorder.

Although the infectious diseases (ID) community has focused on the coronavirus disease 2019 (COVID-19) pandemic for over 2 years, we have also found ourselves in the midst of an epidemic of opioid overdoses [1]. As human immunodeficiency virus (HIV) clinicians, we care for many patients with opioid use disorder (OUD), and persons with HIV (PWH) and untreated OUD experience worse HIV-related outcomes, including reduced access and adherence to antiretrovirals (ARVs), decreased retention in care, and increased morbidity

and mortality [2, 3]. Buprenorphine is an evidence-based, first-line medication for OUD (MOUD); it is effective in reducing opioid craving, illicit opioid use, and overdose deaths [4], and for PWH, it improves engagement and retention in HIV care, ARV adherence, and HIV viral suppression [5, 6]. Thus, there is an urgent need to expand access to MOUD to our patients.

For decades we have known the evidence suggesting the benefits of MOUD [4, 7, 8], yet there remains an implementation gap in the uptake of buprenorphine prescribing in HIV care settings. Buprenorphine can be prescribed by any physicians and advanced practice providers who obtain a special waiver from the Drug Enforcement Agency, commonly known as an "X-waiver." Despite the availability of this life-saving, evidence-based treatment for OUD, fewer than 15% of individuals with OUD in the United States receive MOUD [9], and only 3% of primary care physicians in the United States have buprenorphine waivers [10].

A critical way to reduce barriers to MOUD for PWH is by increasing the number of HIV providers in the United States with buprenorphine waivers. In this study, we call for every HIV provider to obtain a buprenorphine waiver, and we discuss additional strategies to integrate buprenorphine prescribing into HIV primary care.

INTEGRATE BUPRENORPHINE PRESCRIBING INTO HUMAN IMMUNODEFICIENCY VIRUS CARE SETTINGS: A CALL TO ACTION

Primary care settings are effective in treating OUD and are an opportunity to extend the reach of MOUD [11]. Human immunodeficiency virus clinicians are not only HIV specialists; we are also primary care practitioners (PCPs), and, as such, we are well positioned to treat OUD. Studies demonimproved outcomes integrated HIV and OUD treatment compared with referrals for treatment, which perpetuate fragmented, siloed care for a population already facing barriers to accessing healthcare [12]. In one systematic review, prioritizing offering buprenorphine/naloxone in HIV clinics

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Correspondence: A. W. Fujita, MD, 69 Jesse Hill Jr. Drive SE, Atlanta, GA 30303 (afujita@emory.edu).

Table 1. Action Opportunities to Improve the Integration of Buprenorphine Prescribing Into HIV Care Settings at the Individual Clinician, Clinic/Programmatic, and National Guidelines or Policy Levels

	Action Opportunities
INDIVIDUAL HIV CLINICIANS	1. Obtain a buprenorphine waiver [15] 2. Screen for OUD as routine clinical care 3. Prescribe naloxone to persons at risk for accidental overdose 4. Use nonstigmatizing language when discussing OUD 5. Initiate medications for OUD (in-office or at-home inductions) [16, 17] 6. Discuss and offer harm reduction resources
HIV Clinics and Programs	 Provide incentives for obtaining buprenorphine waivers and help facilitate obtaining waivers Implement clinic workflows to routinely screen for substance use disorders Integrate education on OUD into HIV training and continuing medical education Develop collaborations with behavioral health or addiction medicine specialists to offer onsite or offsite support to HIV clinicians managing OUD Partner with addiction medicine and harm reduction organizations within the community Offer HIV testing and treatment options at substance use or addiction medicine clinics [18] Implement previously validated models of care integrating buprenorphine prescribing into HIV care [19–22]
HIV National Guidelines and Policies	 Lobby to reduce barriers to prescribing buprenorphine by eliminating the requirement to obtain buprenorphine waivers Publish and promote guidelines for managing OUD in HIV care settings Include addiction medicine competencies in board certification and maintenance of certification for HIV clinicians Support addiction medicine training and invite addiction medicine speakers at regional and national HIV and ID conferences Ensure buprenorphine is included on all state ADAP formularies (as currently only 24 states include buprenorphine/naloxone on their ADAP formularies) [23]

Abbreviations: ADAP, AIDS Drug Assistance Programs; HIV, human immunodeficiency virus; ID, infectious diseases; OUD, opioid use disorder.

was associated with improved HIV outcomes, whereas offering referral for medications did not [13].

Like the HIV care continuum, we need to optimize the cascade of care for PWH and OUD by streamlining access to MOUD. With years of research to support MOUD as the gold standard for treating OUD, it is our time as HIV providers to meet the goals of implementing buprenorphine prescribing in HIV primary care settings. Our call is for HIV providers to adopt feasible, evidencebased strategies to integrate buprenorphine prescribing into HIV care, starting with obtaining a buprenorphine waiver. In a recently published call for action, authors described opportunities to integrate OUD care into hospital settings [14]; we have adapted these suggestions to OUD care in HIV care settings (Table 1).

Encourage All Human Immunodeficiency Virus Providers to Obtain a Buprenorphine Waiver

Qualified practitioners can apply for a buprenorphine waiver by visiting the Substance Abuse and Mental Health Services Administration (SAMHSA) website and completing an application online (Table 2). Historically, clinicians were required to complete an educational training; however, in April 2021, the US Department of Health and Human Services enabled clinicians to prescribe buprenorphine for OUD for up to 30 patients without this requirement. Human immunodeficiency virus care settings should normalize obtaining an X-waiver as standard of care; this can be accomplished through an opt-out system, requiring waivers as part of onboarding or recredentialing processes, or by having dedicated staff to submit applications on clinicians' behalf.

Increase Education on Opioid Use Disorder to Human Immunodeficiency Virus Providers

We recommend integrating OUD treatment into ID/HIV training and continuing medical education (CME). One barrier to prescribing buprenorphine is lack of knowledge and confidence [24]. Studies have shown that dedicated training sessions improve clinician confidence in prescribing MOUD [25], and increasing training to identify and treat OUD is aligned with suggested actions from a National Academies of Sciences, Engineering, and Medicine workshop [26]. Education should be focused on identifying OUD through screening as part of routine clinical care, prescribing MOUD, and discussing harm reduction strategies with patients. For trainees, education should be integrated into training curricula

through didactics, conferences, or elective rotations. For practicing HIV clinicians, education can be integrated into CME by collaborating with local behavioral health and addiction specialists.

Leverage Previously Validated Models of Care to Integrate Human Immunodeficiency Virus and Opioid Use Disorder Services

One barrier to integration of buprenorphine into HIV primary care is the lack of behavioral health resources within

Table 2. Instructions to Apply for a Buprenorphine Waiver in 5 Minutes

- Submit application to SAMHSA: https:// buprenorphine.samhsa.gov/forms/selectpractitioner-type.php
- 2. Select practitioner type: MD, APRNa, or PA.
- Enter state medical license and DEA registration number.
- Select options to apply for the 30-patient level with exemption (no training required).
- Enter personal information. For certification of qualifying criteria, select "SAMHSA/HHS Buprenorphine practice guideline exemption."

Abbreviations: APRN, advanced practice registered nurse; DEA, Drug Enforcement Administration; MD, Doctor of Medicine; PA, physician assistant; SAMHSA, Substance Abuse and Mental Health Services.

^aFor APRNs who are required by State law to be supervised to prescribe Schedule III, IV, or V medications, a supervising physician's name and DEA number must be provided.

^bFor most HIV providers applying for the first time, the 30-patient level waiver is the appropriate waiver selection. Practitioners who are board certified in addiction medicine or addiction psychiatry may apply for a waiver at the 100-patient level.

the clinic building. Although studies have shown benefit to MOUD with and without adjunctive counseling [27], comprehensive substance use care can be offered through validated models of care. This is particularly important for rural communities, where there is a growing population of people who inject drugs but a scarcity of buprenorphine prescribers.

The ECHO model of care extends access to specialty care to underserved populations or rural areas using video-conferencing technology to mentor local PCPs to treat complex diseases. This model of care successfully delivered care to treat hepatitis C infections in underserved communities [28]. Similarly, this model of telementoring could extend our ability to deliver OUD treatment in HIV care settings, even in the absence of onsite behavioral health specialists.

Another barrier to the uptake of buprenorphine prescribing may be that physicians perceive the workload for managing OUD as too high for a single provider. Collaborative care models, such as The Massachusetts Model, include nurse program directors, nurse care managers, program coordinators, and physicians who share clinical responsibilities, rather than relying on physicians alone. By delivering MOUD as a collaborative team, the Massachusetts Model demonstrated effective use of physician time, comparable outcomes to physician-centered approaches, and increased access to OUD treatment [29]. Other models of care to integrate HIV and OUD services (including the integration of HIV testing and treatment into addiction medicine settings) have been described in detail previously [13, 19, 20, 30-32].

CONCLUSIONS

Like HIV, OUD should be diagnosed and treated at time of presentation. We have learned through caring for PWH that there is "no wrong door" to entry to care. Rapid initiation of ARVs leads to improved linkage of care along the HIV care continuum and decreases time to

viral suppression [33]. Similarly, when PWH present for primary care with OUD, HIV providers should be capable and willing to treat them with MOUD. As HIV providers, we are often the only PCPs our patients see, and to provide optimal HIV primary care, we must be empowered to treat comorbid conditions and adapt to tackle important health crises of our time, whether that be the COVID-19 pandemic or opioid crisis. By offering counseling alone or relying on referrals for MOUD, we are missing critical opportunities to intervene on OUD and improve both HIV and OUD outcomes. One of the first steps you can take toward improving care for your patients with HIV and OUD is to obtain a buprenorphine waiver today to treat OUD.

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References

- Kuehn BM. Accelerated overdose deaths linked with COVID-19. JAMA 2021; 325:523.
- Lucas GM, Cheever LW, Chaisson RE, Moore RD.
 Detrimental effects of continued illicit drug use on
 the treatment of HIV-1 infection. J Acquir
 Immune Defic Syndr 2001; 27:251–9.
- Gonzalez A, Barinas J, O'Cleirigh C. Substance use: impact on adherence and HIV medical treatment. Curr HIV/AIDS Rep 2011; 8:223–34.
- Sordo L, Barrio G, Bravo MJ, et al. Mortality risk during and after opioid substitution treatment: systematic review and meta-analysis of cohort studies. BMJ 2017; 357:j1550.
- Low AJ, Mburu G, Welton NJ, et al. Impact of opioid substitution therapy on antiretroviral therapy outcomes: a systematic review and meta-analysis. Clin Infect Dis 2016; 63:1094–104.
- Altice FL, Bruce RD, Lucas GM, et al. HIV treatment outcomes among HIV-infected, opioid-dependent patients receiving buprenorphine/naloxone treatment within HIV clinical care settings: results from a multisite study. J Acquir Immune Defic Syndr 2011; 56(Suppl 1):S22–32.
- Ling W, Charuvastra C, Collins JF, et al. Buprenorphine maintenance treatment of opiate dependence: a multicenter, randomized clinical trial. Addiction 1998; 93:475–86.
- Mattick RP, Kimber J, Breen C, Davoli M. Buprenorphine maintenance versus placebo or methadone maintenance for opioid dependence. Cochrane Database Syst Rev 2004:CD002207.
- Wakeman SE, Larochelle MR, Ameli O, et al. Comparative effectiveness of different treatment pathways for opioid use disorder. JAMA Netw Open 2020; 3(2):e1920622.

- Rosenblatt RA, Andrilla CH, Catlin M, Larson EH. Geographic and specialty distribution of US physicians trained to treat opioid use disorder. Ann Fam Med 2015; 13:23–6.
- Saloner B, Karthikeyan S. Changes in substance abuse treatment use among individuals with opioid use disorders in the United States, 2004-2013. JAMA 2015; 314:1515-7.
- Weiss L, Netherland J, Egan JE, et al. Integration of buprenorphine/naloxone treatment into HIV clinical care: lessons from the BHIVES collaborative. J Acquir Immune Defic Syndr 2011; 56(Suppl 1):S68–75.
- Oldfield BJ, Munoz N, McGovern MP, et al. Integration of care for HIV and opioid use disorder. AIDS 2019: 33:873–84.
- Englander H, Priest KC, Snyder H, Martin M, Calcaterra S, Gregg J. A call to action: hospitalists' role in addressing substance use disorder. J Hosp Med 2019; 14:E1–4.
- 15. Substance Abuse and Mental Health Services Administration. Become a Buprenorphine Waivered Practitioner. Available at: https://www.samhsa.gov/ medication-assisted-treatment/become-buprenorphi ne-waivered-practitioner. Accessed 15 Jan 2022.
- Substance Abuse and Mental Health Services Administration. Buprenorphine Quick Start Guide. Available at: https://www.samhsa.gov/sites/default/ files/quick-start-guide.pdf. Accessed 12 July 2022.
- Lee JD, Grossman E, DiRocco D, Gourevitch MN. Home buprenorphine/naloxone induction in primary care. J Gen Intern Med 2009; 24:226–32.
- Riano NS, Borowsky HM, Arnold EA, et al. HIV testing and counseling at U.S. substance use treatment facilities: a missed opportunity for early identification. Psychiatr Serv 2021; 72:1385–91.
- Basu S, Smith-Rohrberg D, Bruce RD, Altice FL. Models for integrating buprenorphine therapy into the primary HIV care setting. Clin Infect Dis 2006; 42:716–21.
- Sullivan LE, Bruce RD, Haltiwanger D, et al. Initial strategies for integrating buprenorphine into HIV care settings in the United States. Clin Infect Dis 2006; 43(Suppl 4):S191-6.
- 21. Substance Abuse and Mental Health Services Administration (SAMHSA). Prevention and Treatment of HIV Among People Living with Substance Use and/or Mental Disorders. Vol Publication No. PEP20-06-03-001. Rockville, MD: National Mental Health and Substance Use Policy Laboratory. Substance Abuse and Mental Health Services Administration, 2020.
- 22. Substance Abuse and Mental Health Services Administration (SAMHSA): Practical Tools for Prescribing and Promoting Buprenorphine in Primary Care Settings. National Mental Health and Substance Use Policy Laboratory. Rockville, MD: Substance Abuse and Mental Health Services Administration. 2021.
- 23. McManus KA, Davy-Mendez T, Killelea A, Schranz AJ. Access to medications for opioid use disorder for persons with human immunodeficiency virus in the United States: gaps in coverage by State AIDS Drug Assistance Programs. Open Forum Infect Dis 2022; 9:ofac057.
- Cunningham CO, Kunins HV, Roose RJ, Elam RT, Sohler NL. Barriers to obtaining waivers to prescribe buprenorphine for opioid addiction treatment among HIV physicians. J Gen Intern Med 2007; 22:1325–9.
- Ford C, Ryrie II. A comprehensive package of support to facilitate the treatment of problem drug users in primary care: an evaluation of the training component. Int J Drug Policy 2000; 11:387–92.
- 26. Springer SA, Korthuis PT, Del Rio C. Integrating treatment at the intersection of opioid use disorder

- and infectious disease epidemics in medical settings: a call for action after a National Academies of Sciences, Engineering, and Medicine Workshop. Ann Intern Med 2018; 169:335–6.
- Tetrault JM, Moore BA, Barry DT, et al. Brief versus extended counseling along with buprenorphine/ naloxone for HIV-infected opioid dependent patients. J Subst Abuse Treat 2012; 43:433–9.
- Arora S, Thornton K, Murata G, et al. Outcomes of treatment for hepatitis C virus infection by primary care providers. N Engl J Med 2011; 364:2199–207.
- Alford DP, LaBelle CT, Kretsch N, et al. Collaborative care of opioid-addicted patients in primary care using buprenorphine: five-year experience. Arch Intern Med 2011; 171:425–31.
- Aletraris L, Roman PM. Provision of onsite HIV services in substance use disorder treatment programs: a longitudinal analysis. J Subst Abuse Treat 2015; 57:1–8.
- 31. Assoumou SA, Paniagua SM, Gonzalez P, et al. HIV pre-exposure prophylaxis and buprenorphine at a drug detoxification center during the opioid
- epidemic: opportunities and challenges. AIDS Behav **2021**; 25:2591–8.
- 32. Cohn A, Stanton C, Elmasry H, Ehlke S, Niaura R. Characteristics of U.S. substance abuse treatment facilities offering HIV services: results from a national survey. Psychiatr Serv 2016; 67:692–5.
- 33. Colasanti J, Sumitani J, Mehta CC, et al. Implementation of a rapid entry program decreases time to viral suppression among vulnerable persons living with HIV in the Southern United States. Open Forum Infect Dis 2018; 5:ofy104.