

Integrating Buprenorphine Treatment for Opioid Use Disorder in HIV Primary Care

DISSEMINATION OF
EVIDENCE-
INFORMED.
INTERVENTIONS



Intervention Summary

The intersection of opioid use, particularly via injecting, and HIV is well documented.¹ In the United States, contracting HIV through injection drug use, either directly or via sexual contact with a person who injects drugs, accounts for more than one-third of estimated AIDS cases since the beginning of the epidemic, and 9% of estimated new infections.² Untreated opioid use disorder is problematic, particularly as injecting behavior is associated with increased risk of HIV transmission, as it interferes with antiretroviral treatment adherence^{3,4,5,6,7,8,9} and impedes HIV viral suppression.^{10,11,12,13}

The devastating outbreak of more than 180 HIV infections diagnosed in 2015 among persons injecting oxycodone in rural southeastern Indiana is an example of the way in which injection drug use can be the primary driver of localized epidemics.¹⁴

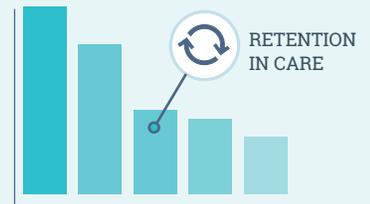
In recent years, dramatic increases in opioid-related fatal overdoses and acute hepatitis C infections^{15,16} underscore the urgent need to identify and treat opioid use disorder in both persons living with HIV (PLWH) and people at risk of HIV infection. In January 2016, the CDC reported that since 2000, there's been a 200% increase in the rate of overdose deaths involving opioids.¹⁷

Opioid use disorder is treatable with FDA-approved pharmacotherapies. Buprenorphine is one such treatment option, which can be delivered in the primary care office setting. For PLWH, office-based buprenorphine treatment delivered in HIV clinics is associated with decreased opioid use, increased ART use, higher quality of HIV care, and improved quality of life.^{18,19,20,21}

This HIV primary care model intervention aligns with the medical home model as it allows patients to readily access comprehensive HIV and addiction services under one roof. The Integrating Buprenorphine Treatment for Opioid Use Disorder in HIV Primary Care model follows principles of harm reduction, including reducing the harms of addiction. This enables providers to treat addiction along with other chronic medical conditions experienced by their patients. The approach secures additional patient buy-in by investing in the existing trust and communication they develop with their primary care providers.

The following information provides an overview of the Integrating Buprenorphine Treatment for Opioid Use Disorder in HIV Primary Care intervention and is intended for implementation in HIV primary care settings that do not already provide on-site buprenorphine treatment services.

HIV Care Continuum



Professional Literature

There are four broad classes of opioids: endogenous opioids that are naturally produced in the body (endorphins); opium alkaloids (e.g. morphine, codeine), semi-synthetic opioids (e.g., heroin, oxycodone, buprenorphine); and fully synthetic opioids (e.g. methadone, fentanyl). Opioids are commonly prescribed for the relief of acute and chronic pain, administered as agonist pharmacotherapy for the effective treatment of moderate-to-severe opioid use disorders, and taken by persons for non-medical reasons to feel good or to feel better.

Opioids are among the most misused drugs in America. According to the 2014 National Survey on Drug Use and Health, prescription pain relievers were the second most frequently used illegal drug among adults in the United States (second only to marijuana).²² Opioids bind to specific receptors in the central nervous system, releasing dopamine that stimulates the brain's reward circuits. Opioid taking behaviors are reinforced and for some persons can lead to a loss of control with

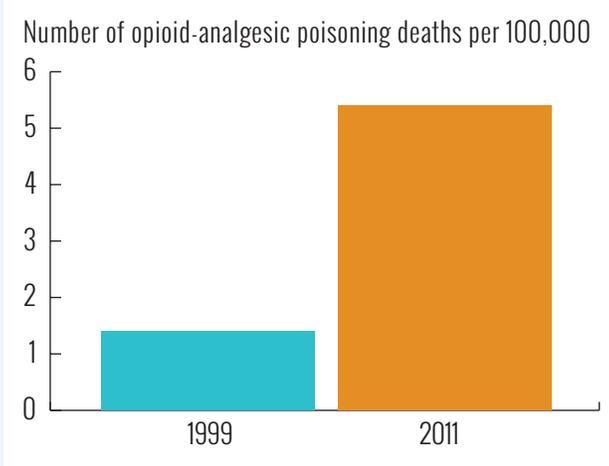
Opioids

are among the most misused drugs in America.

compulsive use, cravings, and continued use despite consequences, i.e. addiction. Approximately 4.74 million Americans age 12 and older reported nonmedical opioid use in the last month, and among them 53% met the criteria for an opioid use disorder.^{23,24}

The current opioid use epidemic has dramatically affected persons from all walks of life and gained the urgent attention of the lay press, public health officials, and medical providers. Between 2004 and 2011, emergency department visits related to oxycodone, hydrocodone, methadone, and morphine products increased 220%, 96%, 74%, and 144%, respectively.²⁵ The age-adjusted rate for opioid-analgesic poisoning deaths nearly quadrupled from 1.4 per 100,000 in 1999 to 5.4 per 100,000 in 2011,²⁶ and the rate for deaths involving heroin has almost tripled since 2010, as individuals substituted opioid analgesics with a cheaper and more accessible drug, heroin.²⁷

Opioid misuse and opioid use disorders are more prevalent among persons living with HIV (PLWH) than the general population,²⁸ and PLWH underutilize substance use treatment.^{29,30} Not only is opioid injecting a risk factor for HIV transmission, but PLWH have often been prescribed opioid analgesics for chronic pain or, prior to the introduction of effective antiretroviral therapies, to manage pain and suffering during the dying process. Pain was common and historically undertreated in PLWH; estimates of the prevalence of chronic pain in PLWH ranges from 39–85%.^{31,32,33,34,35,36,37,38,39} Greater pain severity also has been observed in PLWH compared to the general population,⁴⁰ and PLWH with substance use histories have higher pain intensity and symptom distress than non-drug-using PLWH.^{41,42,43}



HIV care providers have reported only limited confidence in their ability to recognize opioid analgesic misuse in their patients receiving opioids for chronic pain. With calls for more regulation and education for prescribers, medical providers are developing a greater awareness of the principles of safe opioid prescribing, which include the need to regularly monitor, and respond to the risk and benefits of prescribing for all of their patients.⁴⁵ Learning how to recognize the signs and symptoms of opioid use disorder is of particular value to HIV primary care providers, since the treatment of substance use problems can increase engagement in HIV care.⁴⁶

For persons that are diagnosed with opioid use disorders, there are pharmacologic and non-pharmacologic treatment options. Three medications are approved by the FDA for the treatment of opioid use disorder: methadone, naltrexone, and buprenorphine. **Methadone**, an opioid agonist, can be provided as daily maintenance therapy and has been the gold standard for the effective treatment of opioid addiction since national consensus guidelines were published in 1998.⁴⁷ Methadone treatment, however, is limited by federal and state laws to highly-regulated opioid treatment programs. While **naltrexone**, an opioid antagonist, can be prescribed in any setting by any clinician with the authority to prescribe any medication, the effectiveness of daily oral naltrexone for the treatment of opioid use disorder is limited by poor adherence.⁴⁸ A monthly intramuscular extended-release formulation of naltrexone may reduce some of these

adherence issues and is another office-based treatment option under current investigation. **Buprenorphine**, a partial opioid agonist taken sublingually, is as effective as moderate doses of methadone and can be prescribed in office-based settings by trained physicians with an appropriate Drug Enforcement Agency (DEA) registration.^{49,50,51} Like methadone, buprenorphine has been shown to decrease HIV transmission risk behavior and improve HIV outcomes.^{52,53} In the Buprenorphine HIV Evaluation and Support (BHIVES) initiative, a collaboration of ten HIV clinics in the U.S. demonstrated that PLWH, who received buprenorphine treatment for opioid use disorders from HIV clinic providers, decreased their opioid use,⁵⁴ increased ART use,⁵⁵ experienced higher quality of HIV care,⁵⁶ and reported better quality of life.⁵⁷

While national HIV/AIDS treatment guidelines currently recommend opioid agonist therapy for engaging people who inject drugs in HIV care,⁵⁸ not all medical providers have developed the skills, confidence, and clinical support structures to effectively treat opioid use disorder with office-based buprenorphine treatment. Indeed, the number of patients with opioid use disorders (regardless of HIV status) still significantly exceeds the capacity of opioid treatment services nationwide.^{59,60}



Theoretical Basis

A behavioral change theory is a combination of, “interrelated concepts, definitions, and propositions that present a systematic view of events or situations by specifying relations among variables, in order to explain or predict the events or situations.” By grounding an intervention in theory, the component parts are intentionally sequenced to build off of one another to facilitate a change in health behavior.

This intervention is grounded in the Theory of Diffusion of Innovation^{62,63} which outlines the process by which an innovation is spread through various communication channels to the entirety of a social system. Diffusion of Innovations explains the way in which an innovative idea spreads and creates change at the systems level. The theory examines four main elements that contribute to the understanding of the spread of an innovative idea: the innovation, communication channels, time, and the social context. The theory suggests that individuals and groups adopt in different time intervals. In descending order of time to adopt, the five adopter categories are (1) innovators, (2) early adopters, (3) early majority, (4) late majority, and (5) laggards. An innovative idea is considered to have spread throughout a system when a critical mass of the system has adopted.

Within this intervention, clinic administrators, the treatment team’s clinical coordinator, and the lead HIV provider who is trained in prescribing buprenorphine are innovators as they introduce the integrated buprenorphine model into the HIV clinic setting. Innovators in leadership positions have the capacity to develop the clinical structures and workflows to support office-based buprenorphine services. As such, they may be identified as intervention champions. New buprenorphine prescribers and trained clinical staff may become early adopters, and as additional clinical staff and patient and community stakeholders are exposed to the intervention and perceive the benefits of the intervention, they may support the model as the early majority (as they follow the trend set by the early adopters). Additional clinic personnel, medical staff, and treatment team members who fall into the category of the late majority and laggards will, over time, engage in the intervention or feel the impact of the intervention. However, their status as late majority or laggards may be indicative of initially resisting the intervention (a potential barrier to track throughout the implementation). The model follows the natural diffusion of concepts, trends, and culture that exists in a clinic setting.



Intervention Components and Activities

The Integrating Buprenorphine Treatment for Opioid Use Disorder in HIV Primary Care intervention operates at two levels by providing individual level treatment to the patient and creating systems level change within the clinic.

Intervention components and activities that occur at the **patient level** include:

- 1. Assessing patients for buprenorphine treatment.** The objectives of the assessment process are to determine the patient's clinical eligibility for buprenorphine treatment, provide the basis for a treatment plan, and establish a baseline measure to evaluate a patient's response to treatment.^{64,65} Components of the patient assessment conducted by the treatment team will include an initial clinical encounter to:
 - ▶ Establish the diagnosis of opioid use disorder, including the duration and severity of opioid use. Buprenorphine treatment is recommended when 4 or more of eleven DSM-5 criteria are met, i.e. moderate-to-severe opioid use disorder;
 - ▶ Discuss current opioid use and patterns, including level of tolerance, prior quit attempts, prior experiences with opioid agonist treatment, nature and severity of opioid withdrawal symptoms, time of last use and current withdrawal status;
 - ▶ Document the patient's use of other substances, including tobacco, alcohol, and other drugs;
 - ▶ Identify patients who need medically supervised withdrawal management from alcohol, benzodiazepines, or other sedatives prior to initiating buprenorphine treatment;
 - ▶ Identify comorbid medical conditions and psychiatric disorders and determine how, when, and where they will be addressed;
 - ▶ Screen for communicable diseases and address them as needed;
 - ▶ Assess patient's access to social supports, family, friends, employment, housing, finances, and legal assistance;
 - ▶ Determine patient's readiness to participate in treatment and their goals for engaging in treatment.⁶⁶

- 2. Preparing patients for treatment.** Every patient to whom buprenorphine is prescribed should be prepared by the treatment team in advance to succeed. The treatment team will engage with eligible patients to:
 - ▶ Educate the patient about buprenorphine treatment and how to properly administer, safeguard, and discard the medication; what they can expect to experience at each stage of treatment; and alternatives to buprenorphine treatment;
 - ▶ Refer patients who need medically supervised withdrawal management from alcohol, benzodiazepines, or other sedatives prior to initiating buprenorphine treatment;
 - ▶ Complete a treatment agreement describing the goals of treatment, the risks and benefits of treatment, and the relationship between the patient and the treatment team;
 - ▶ Communicate with other providers in patient's circle of care about the treatment plan, especially with other substance use treatment or mental health providers. (This will require signed releases of information to exchange health information);
 - ▶ Prepare patients to achieve a mild-moderate state of opioid withdrawal on the day of buprenorphine initiation. The patient should exhibit signs of at least mild withdrawal prior to receiving their first dose of

buprenorphine. In preparation for initiating treatment and to ease discomfort, the treatment team may wish to dispense small quantities of medications to provide symptomatic relief of opioid withdrawal symptoms beforehand. In addition to anticipatory guidance, the program may wish to dispense or prescribe “kick packs” or “comfort packs” (i.e. small quantities of medications to provide symptomatic relief of opioid withdrawal symptoms).

3. Initiating, stabilizing, and maintaining patients on buprenorphine treatment. The goal of initiation and stabilization is to find the lowest dose of buprenorphine at which the patient discontinues or markedly reduces the use of other opioids without experiencing withdrawal symptoms, significant side effects, or cravings. When a stable buprenorphine dose is achieved, patients enter into a maintenance phase of treatment.

- ▶ The treatment team should determine if it will offer home and/or office based treatment initiation to patients and develop local protocols for each.
- ▶ After buprenorphine initiation, the treatment team monitors patients either daily (for unstable patients) or once or twice weekly with phone monitoring (stable patients). The treatment team increases the buprenorphine dose daily until the patient no longer has signs and symptoms of withdrawal or craving and has not developed signs or symptoms of opioid excess.
- ▶ Most patients reach their target dose within the first two weeks of treatment and progress to the maintenance stage of treatment. Monitoring visits, which may include counseling and functional assessments and urine drug testing, can be scheduled between weekly and monthly, depending on patient’s clinical stability. At a minimum, patients should be seen by the prescribing provider every 3 months.
- ▶ If patients relapse or destabilize, they should return to more frequent monitoring or treatment re-initiation or be referred for a higher level of care.

Intervention components and activities that occur at the **systems level** include:

- 1. Provider Training:** Physician prescribers will complete buprenorphine waiver training prior to project initiation.
- 2. Staff Training:** Conduct training for the treatment team and other members of the organization:
 - ▶ The Clinical Coordinator and other members of the treatment team will receive training on assessing and preparing patients for treatment, as well as the stages of buprenorphine treatment.
 - ▶ All clinic staff and administrators should be offered in-service training on the following topics: addiction and harm reduction basics, the effects of substance use treatment on the HIV care cascade, cultural competence regarding the stigma of drug use and HIV.
- 3. Clinic Structure and Workflows:** Clinical space, schedules, and practice protocols need to be developed to integrate buprenorphine treatment into the existing HIV primary care work flows. Materials may include written buprenorphine practice protocols, DSM-5 worksheets, COWS worksheets, patient education forms, informed consents, treatment agreements, urine drug testing procedures, and Authorizations to Exchange Health Information for substance use treatment.
- 4. Clinical Mentorship:** Buprenorphine prescribers will identify and have access to a clinical mentor, defined as another health professional with expert knowledge and practical experience in buprenorphine treatment.⁶⁷ Ideally, this mentor will maintain a buprenorphine practice in the same health network or geographic locale and meet monthly for case conferences. Clinic prescribers also will be encouraged to participate in the Physician Clinical Support System for Medication Assisted Treatment (PCSS-MAT), a national training and mentoring project.⁶⁸

- 5. Community Referral Networks:** The treatment team will develop a system of referral in the local health care community, so that providers can refer patients who need supplemental or higher levels of care for restabilization and/or the treatment of comorbid substance use and mental health disorders. Examples of types of care include counseling, mutual support groups, withdrawal management, vocational training, methadone treatment, intensive outpatient treatment, and residential treatment.



Staffing Requirements

The following staff positions need to be developed and filled in order to successfully implement the intervention.

STAFF TITLE	DESCRIPTION
Linkage staff	
<p>PHYSICIANS (at least 2 MD or DO with buprenorphine prescribing privileges)</p> 	<p>The lead physician is responsible for all aspects of patient treatment including:</p> <ul style="list-style-type: none"> ▶ conducting or reviewing patient assessments; ▶ prescribing buprenorphine in accordance with Schedule III requirements; ▶ managing initiation, stabilization, and maintenance of buprenorphine treatment (with the support from the Clinical Coordinator); ▶ record keeping that may be referenced for a DEA inspection; and ▶ providing clinical guidance and direct supervision to the Clinical Coordinator. <p>A second physician or prescriber is required to provide backup coverage in the event that the lead physician is on vacation, ill, or unavailable for any other reason.</p>
<p>CLINICAL COORDINATOR</p> 	<p>The clinical coordinator is a key member of the buprenorphine treatment team and serves an essential role in the implementation process. This person must possess not only the clinical knowledge and skills to participate in individual patient treatment, but also the organizational and communication skills to execute systems level activities.</p> <p>The Clinical Coordinator is responsible for:</p> <ul style="list-style-type: none"> ▶ availability to see patients in the clinic daily, participating in patient assessment and preparation, including day-to-day program concerns, education, and counseling; ▶ supporting the patient and prescriber in buprenorphine initiation, stabilization, and maintenance treatment procedures under the supervision of the prescribing physician; ▶ assisting the prescribing physician in making referrals to community providers for counseling or higher levels of care when needed; ▶ maintaining therapeutic relationships with both the patient and the medical provider; and ▶ overseeing the following patient care components: <ul style="list-style-type: none"> • case management; • medication management and treatment monitoring; • insurance authorization and troubleshooting; • relationship building and patient linkage to additional support (drug treatment services and mental health care); and • relationship building and facilitation of ancillary services (including patient transportation).

DATA MANAGER



The Data Manager is responsible for:

- ▶ Consenting patients into the study;
- ▶ Collecting and submitting data required for multi-site evaluation;
- ▶ Coordinating the collection of patient surveys, encounter forms, basic chart data abstraction, and implementation measures, and reporting them to the Dissemination and Evaluation Center (DEC); and
- ▶ Providing quality assurance reports and updates to intervention team about study referrals, enrollment retention, etc.

Staff Characteristics



The qualities of the treatment team include being non-judgmental, curious, respectful, persistent, and attentive to patients and their responses and behavior. To facilitate the most effective treatment, team members acknowledge that it may be difficult to talk about some topics, ask questions out of concern for a patient's health, avoid using labels or diagnoses, and assure patient confidentiality.

Other clinic providers and staff may not be considered part of the core treatment team, yet their training, language, behavior, and buy-in are essential. All office staff will be offered training on the topics described above. The success of the intervention may depend on the degree to which all clinic administrators, providers, and staff are able to demonstrate:

- ▶ a multidisciplinary, team-based approach to patient care;
- ▶ an working understanding of addiction as a chronic brain disease characterized by inability to consistently abstain, impairment in behavioral control, craving, diminished recognition of significant problems with one's behaviors and interpersonal relationships, and a dysfunctional emotional response;
- ▶ an understanding of the cycles of relapse and remission (without treatment or engagement in recovery activities, addiction is progressive and can result in disability or premature death⁶⁹);
- ▶ cultural competence and compassion in working with persons who have been stigmatized and shamed by others because of their HIV disease, sexual orientation, mental health or substance use;
- ▶ clear communication and thorough documentation that meets HIPAA requirements.



Programmatic Requirements

The following are programmatic requirements that need to be addressed prior to implementation in order to facilitate a successful implementation:

- ▶ Hire key personnel.
- ▶ Develop the following protocols (i.e., home-based and clinic-based treatment initiation protocols) that correspond to patient stability and experience and to provider skills and confidence:
 - Initial patient assessment
 - Patient education and preparation for treatment
 - Treatment initiation and reassessment
 - Maintenance treatment and monitoring (urine toxicology testing and in accordance with state regulations, check with prescription drug monitoring program (PDMP))

- Patient-centered treatment intensification (for example: more frequent visits, more counseling, other outpatient drug treatment program)
 - Treatment failure and/or transfer of care
 - Re-initiation of treatment after drop out
 - Create procedures to follow federal mandates for record keeping practices: Keeping and maintaining a patient log for each prescriber; ensuring confidentiality of medical records, their storage, and their maintenance for Drug Enforcement Administration (DEA) visits
- ▶ Conduct training for all members of the organization, including providers and the clinical coordinator.
 - ▶ Determine the types of insurance that will be accepted, whether or not to apply to patient assistance programs, fees, payment plans, and policies. Identify the individual who will address prior authorization for insurance.
 - ▶ Secure sustainable patient access to buprenorphine medication. Establish working relationship with onsite or community pharmacy that will dispense medication and working with benefits counselors to obtain coverage for opioid treatment pharmacotherapies. Buprenorphine comes in a variety of sublingual formulations. Unless the patient also is pregnant, most patients will receive co-formulated buprenorphine and naloxone tablets or film.
 - ▶ Establish or (strengthen existing) relationships with mental health and substance use treatment providers (on site or in the community). Create a Memorandum of Agreement (MOU) for referrals of patients who need more intensive services for addiction medicine with an agreed upon timeline for referral appointments.
 - ▶ Implement policies that address safety and boundary issues.

Additionally, DEII performance sites must assess their capacity to conduct process and outcome activities during the funded period.



Costs

During a cross-site evaluation, the median monthly cost of integrating HIV care and co-formulated buprenorphine/naloxone (bup/nx) in 2011 was \$136 per patient for labor and overhead and \$8 per patient for toxicology analyses.⁷⁰ “This represent[ed] an incremental cost to the clinic of about \$22 per month compared with treating HIV-infected patients with an opioid dependence who were not assigned to integrated care. In integrated care, however, there are fewer encounters with physicians and more encounters with non-physician providers, whose services are less expensive, but also less likely to be billable to third party payers.”⁷¹

Daily medication doses generally range from 8-24 mg, and previous cost estimates placed this at \$4 to \$19 per day, per patient. However, generic bup/nx is available and some ADAP or Medicaid state formularies (e.g. Oregon, New York State, California) do cover bup/nx, decreasing costs even further. This information is particularly important to highlight given Medicaid expansion under the Affordable Care Act. As such, agencies should check their state formularies for additional discounts and coverage.



Resources

OVERVIEW OF PRIOR SPNS INITIATIVES

- ▶ An Evaluation of Innovative Methods for Integrating Buprenorphine Opioid Abuse Treatment in HIV Primary Care Settings www.hab.hrsa.gov/abouthab/special/buprenorphine.html

IMPLEMENTATION/REPLICATION MATERIALS

- ▶ Integration of Buprenorphine into HIV Primary Care Settings: Tools from the Integrating HIV Innovative Practices Program: careacttarget.org/ihip/buprenorphine
- ▶ Buprenorphine FAQ and Peer Discussion: careacttarget.org/library/buprenorphine-faq-and-peer-discussion

TOOLS FOR PROVIDERS

- ▶ Buprenorphine Waiver Management: www.samhsa.gov/medication-assisted-treatment/buprenorphine-waiver-management
- ▶ How To Get Started AFTER you have completed the DATA 2000 training (A guide for providers): www.buppractice.com/howto
- ▶ Mentoring for providers: pcssmat.org/mentoring/
- ▶ Buprenorphine Treatment Physician Locator: www.samhsa.gov/medication-assisted-treatment/physician-program-data/treatment-physician-locator
- ▶ Opioid Treatment Program Directory: dpt2.samhsa.gov/treatment/directory.aspx
- ▶ The National Alliance of Advocates for Buprenorphine Treatment: www.naabt.org/
- ▶ ASAM National Practice Guideline for the Use of Medications in the Treatment of Addiction Involving Opioid Use: www.asam.org/practice-support/guidelines-and-consensus-documents/npg/supplement
- ▶ ASAM Buprenorphine Course for Office-Based Treatment of Opioid Use Disorders: www.asam.org/education/live-and-online-cme/buprenorphine-course
- ▶ Clinical Guidelines for the Use of Buprenorphine in the Treatment of Opioid Addiction. Treatment Improvement Protocol (TIP) Series 40: http://buprenorphine.samhsa.gov/Bup_Guidelines.pdf

PEER-REVIEWED ARTICLES PROVIDING BACKGROUND INFORMATION ON BUPRENORPHINE

- ▶ A model federal collaborative to increase patient access to buprenorphine treatment in HIV primary care. www.researchgate.net/publication/50194286_A_model_federal_collaborative_to_increase_patient_access_to_buprenorphine_treatment_in_HIV_primary_Care
- ▶ A comparison of buprenorphine induction strategies: patient-centered home-based inductions versus standard-of-care office-based inductions. www.ncbi.nlm.nih.gov/pmc/articles/PMC3081891/
- ▶ Integrating Buprenorphine/Naloxone Treatment into HIV Clinical Care. www.nyam.org/news/docs/pdf/BHIVES_JAIDS_56-S1-March2011.pdf
- ▶ Home-versus office-based buprenorphine inductions for opioid-dependent patients. www.ncbi.nlm.nih.gov/pmc/articles/PMC2849656/
- ▶ Inquiries about and initiation of buprenorphine treatment in an inner-city clinic. www.ncbi.nlm.nih.gov/pmc/articles/PMC2746741/
- ▶ Factors affecting willingness to provide buprenorphine treatment. www.ncbi.nlm.nih.gov/pmc/articles/PMC2866292/
- ▶ Barriers to obtaining waivers to prescribe buprenorphine for opioid addiction treatment among HIV physicians. www.ncbi.nlm.nih.gov/pmc/articles/PMC2219773/
- ▶ Office-based buprenorphine for patients with opioid dependence. www.ncbi.nlm.nih.gov/pmc/articles/PMC3694223/

- ¹ Integrating HIV Innovative Practices (IHIP). Chapter 1: A problem. TARGET Center. August 2012. Available at: <https://careacttarget.org/library/chapter-1-problem>.
- ² Integrating HIV Innovative Practices (IHIP). Chapter 1: A problem. TARGET Center. August 2012. Available at: <https://careacttarget.org/library/chapter-1-problem>.
- ³ Cheever LW, Kresina TF, Cajina A, et al. A model Federal collaborative to increase patient access to buprenorphine treatment in HIV primary care. *JAIDS (Suppl)*. 2011; 56(1):S3–S6.
- ⁴ Ingersoll K. The impact of psychiatric symptoms, drug use, and medication regimen on non-adherence to HIV treatment. *AIDS Care Psychological and Socio-Medical Aspects of AIDS/HIV*. 2004;16(2):199–211.
- ⁵ Berg KM, Demas PA, Howard AA, et al. Gender differences in factors associated with adherence to antiretroviral therapy. *J Gen Intern Med*. 2004;19(11):1111–17.
- ⁶ Hinkin CH, Barclay TR, Castellon SA, et al. Drug use and medication adherence among HIV-1 infected individuals. *AIDS Behav*. 2007;11(2):185–94.
- ⁷ Arnsten JH, Demas PA, Grant RW, et al. Impact of active drug use on antiretroviral therapy adherence and viral suppression in HIV-infected drug users. *J Gen Intern Med*. 2002;17(5):377–81.
- ⁸ Chander G, Lau B, Moore RD. Hazardous alcohol use: a risk factor for non-adherence and lack of suppression in HIV infection. *JAIDS*. 2006;43(4):411–381.
- ⁹ Braithwaite RS, McGinnis KA, Conigliaro J, et al. A temporal and dose-response association between alcohol consumption and medication adherence among veterans in care. *Alcohol Clin Exp Res*. 2005;29(7):1190–97.
- ¹⁰ Chander G, Lau B, Moore RD. Hazardous alcohol use: a risk factor for non-adherence and lack of suppression in HIV infection. *JAIDS*. 2006;43(4):411–381.
- ¹¹ Palepu A, Tyndall MW, Li K, et al. Alcohol use and incarceration adversely affect HIV-1 RNA suppression among injection drug users starting antiretroviral therapy. *J Urban Health*. 2003;80(4):667–75.
- ¹² Conigliaro J, Gordon AJ, McGinnis KA, et al. How harmful is hazardous alcohol use and abuse in HIV infection: do health care providers know who is at risk? *JAIDS*. 2003;33(4):521–25.
- ¹³ Lucas GM, Gebo KA, Chaisson RE, et al. Longitudinal assessment of the effects of drug and alcohol abuse on HIV-1 treatment outcomes in an urban clinic. *AIDS*. 2002;16(5):767–74.
- ¹⁴ Centers for Disease Control. QuickStats: Use of Prescription Opioid Analgesics* in the Preceding 30 Days Among Adults Aged ≥20 Years, by Poverty Level† and Sex — National Health and Nutrition Examination Survey, United States, 2007–2012. *MMWR*. April 24, 2015. Available at: www.cdc.gov/mmwr/preview/mmwrhtml/mm6415a10.htm?s_cid=mm6415a10_w.
- ¹⁵ Zibbell JE, Iqbal K, Patel RC, et al. Increases in hepatitis C virus infection related to injection drug use among persons aged </=30 years - Kentucky, Tennessee, Virginia, and West Virginia, 2006–2012. *MMWR*. 2015;64:453–458.
- ¹⁶ Suryaprasad AG, White JZ, Xu F, et al. Emerging epidemic of hepatitis C virus infections among young nonurban persons who inject drugs in the United States, 2006–2012. *Clin Infect Dis*. 2014;59:1411–9.
- ¹⁷ Centers for Disease Control. Increases in Drug and Opioid Overdose Deaths — United States, 2000–2014. *MMWR*. January 1, 2016. Available at: www.cdc.gov/mmwr/preview/mmwrhtml/mm6450a3.htm?s_cid=mm6450a3_w.
- ¹⁸ Fiellin DA, Weiss L, Botsko M, et al. Drug treatment outcomes among HIV-infected opioid-dependent patients receiving buprenorphine/naloxone. *JAIDS (Suppl)*. 2011;56(1): S33–8. Available at: www.ncbi.nlm.nih.gov/pubmed/21317592.
- ¹⁹ 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. *JAIDS (Suppl)*. 2011;56(1): S22–32. Available at: www.ncbi.nlm.nih.gov/pubmed/21317590.
- ²⁰ Korthuis PT, Fiellin DA, Fu R, et al. Improving adherence to HIV quality of care indicators in persons with opioid dependence: the role of buprenorphine. *JAIDS (Suppl)*. 2011;56(1): S83–90. Available at: www.ncbi.nlm.nih.gov/pubmed/21317600.
- ²¹ Korthuis PT, Tozzi MJ, Nandi V, et al. Improved quality of life for opioid-dependent patients receiving buprenorphine treatment in HIV clinics. *JAIDS (Suppl)*. 2011;56(1): S39–45. Available at www.ncbi.nlm.nih.gov/pubmed/21317593.
- ²² Substance Abuse and Mental Health Administration (SAMHSA), Center for Behavioral Health Statistics and Quality. *Behavioral health trends in the United States: Results from the 2014 National Survey on Drug Use and Health*. 2015. Available at: www.samhsa.gov/data/sites/default/files/NSDUH-FRR1-2014/NSDUH-FRR1-2014.pdf.
- ²³ Substance Abuse and Mental Health Administration (SAMHSA), Center for Behavioral Health Statistics and Quality. *Behavioral health trends in the United States: Results from the 2014 National Survey on Drug Use and Health*. 2015. Available at: www.samhsa.gov/data/sites/default/files/NSDUH-FRR1-2014/NSDUH-FRR1-2014.pdf.
- ²⁴ Includes nonmedical prescription pain medication use and heroin.
- ²⁵ Substance Abuse and Mental Health Services Administration (SAMHSA). *Highlights of the 2011 Drug Abuse Warning Network (DAWN) findings on drug-related emergency department visits*. February 22, 2013. Available at: www.samhsa.gov/data/sites/default/files/DAWN127/DAWN127/sr127-DAWN-highlights.htm.
- ²⁶ Centers for Disease Control and Prevention. Drug-poisoning Deaths Involving Opioid Analgesics: United States, 1999–2011. *NCHS Data Brief*. Sept. 2014; 166. Available at: www.cdc.gov/nchs/data/databriefs/db166.htm
- ²⁷ Hedegaard H, Chen LH, Warner M. Drug-poisoning deaths involving heroin: United States, 2000–2013. *NCHS Data Brief*. March 2015; no 190. www.cdc.gov/nchs/data/databriefs/db190.htm.
- ²⁸ Durvasula R, Miller TR. Substance Abuse Treatment in Persons with HIV/AIDS: Challenges in Managing Triple Diagnosis. *Ann Behav Med*. 2014;40(2):43–52.
- ²⁹ Goldstein RB, Rotheram-Borus MJ, Johnson MO, et al. Insurance coverage, usual source of care, and receipt of clinically indicated care for comorbid conditions among adults living with human immunodeficiency virus. NIMH Healthy Living Trial Group. *Med Care*. 2005 Apr; 43(4):401–10.
- ³⁰ Burnam MA, Bing EG, Morton SC, et al. Use of mental health and substance abuse treatment services among adults with HIV in the United States. *Arch Gen Psychiatry*. 2001 Aug; 58(8):729–36.
- ³¹ Merlin JS, Westfall AO, Raper JL, et al. Pain, mood, and substance abuse in HIV: implications for clinic visit utilization, antiretroviral therapy adherence, and virologic failure. *JAIDS*. 2012;61(2):164–170.
- ³² Cervia LD, McGowan JP, Weseley AJ. Clinical and demographic variables related to pain in HIV-infected individuals treated with effective, combination antiretroviral therapy (cART). *Pain Med*. 2010;11(4):498–503.
- ³³ Harding R, Lampe FC, Norwood S, et al. Symptoms are highly prevalent among HIV outpatients and associated with poor adherence and unprotected sexual intercourse. *Sex Transm Infect*. 2010;86(7):520–524.
- ³⁴ Lee KA, Gay C, Portillo CJ, et al. Symptom experience in HIV-infected adults: a function of demographic and clinical characteristics. *J Pain Symptom Manage*. 2009;38(6):882–893.

- ³⁵ Miaskowski C, Penko JM, Guzman D, et al. Occurrence and characteristics of chronic pain in a community-based cohort of indigent adults living with HIV infection. *J Pain*. 2011;12(9):1004–1016.
- ³⁶ Silverberg MJ, Gore ME, French AL, et al. Prevalence of clinical symptoms associated with highly active antiretroviral therapy in the Women's Interagency HIV Study. *Clin Infect Dis*. 2004;39(5):717–724.
- ³⁷ Silverberg MJ, Jacobson LP, French AL, et al. Age and racial/ethnic differences in the prevalence of reported symptoms in human immunodeficiency virus-infected persons on antiretroviral therapy. *J Pain Symptom Manage*. 2009;38(2):197–207.
- ³⁸ Newsham G, Bennett J, Holman S. Pain and other symptoms in ambulatory HIV patients in the age of highly active antiretroviral therapy. *JANAC*. 2002;13(4):78–83.
- ³⁹ Breitbart W, Rosenfeld BD, Passik SD, et al. The undertreatment of pain in ambulatory AIDS patients. *Pain*. 1996;65:243–249.
- ⁴⁰ Tsao JC, Dobalian A, Naliboff BD. Panic disorder and pain in a national sample of persons living with HIV. *J Pain*. 2004; 109(1-2): 172-80.
- ⁴¹ Vogl D, Rosenfeld B, Breitbart W, et al. Symptom prevalence, characteristics, and distress in AIDS outpatients. *J Pain Symptom Manage*. 1999;18(4):253–62.
- ⁴² Del Borgo C, Izzi I, Chiarotti F, et al. Multidimensional aspects of pain in HIV-infected individuals. *AIDS Patient Care STDS*. 2001;15(2):95–102.
- ⁴³ Tsao JC, Stein JA, Dobalian A. Pain, problem drug use history, and aberrant analgesic use behaviors in persons living with HIV. *J Pain*. 2007;133(1-3):128–37.
- ⁴⁴ Lum PJ, Little S, Botsko M, et al. Opioid-prescribing practices and provider confidence recognizing opioid analgesic abuse in HIV primary care settings. *JAIDS (Suppl)*. 2011;56(1):S91–97.
- ⁴⁵ Alford DP, Zisblatt L, Ng P, et al. SCOPE of Pain: An Evaluation of an Opioid Risk Evaluation and Mitigation Strategy Continuing Education Program. *Pain Med*. 2015.
- ⁴⁶ Lucas GM, Chaudhry A, Hsu J, et al. Clinic-based treatment of opioid-dependent HIV-infected patients versus referral to an opioid treatment program: A randomized trial. *Ann Intern Med*. 2010. 152(11): p. 704–11.
- ⁴⁷ National Consensus Development Panel on Effective Medical Treatment of Opiate Addiction. Effective Medical Treatment of Opiate Addiction. *JAMA*. 1998;280(22): 1936–1943.
- ⁴⁸ Kampman K, Jarvis M. American Society of Addiction Medicine (ASAM) National Practice Guideline for the Use of Medications in the Treatment of Addiction Involving Opioid Use. *J Addict Med*. 2015;9: 1–10.
- ⁴⁹ Johnson RE, Chutuape MA, Strain EC, et al. A comparison of levomethadyl acetate, buprenorphine, and methadone for opioid dependence. *N Engl J Med*. 2000;343:1290–1297.
- ⁵⁰ Johnson RE, Strain EC, Amass L. Buprenorphine: how to use it right. *Drug Alcohol Depend*. 2003;70:S59–S77.
- ⁵¹ Maramba I, Pani PP, Pacini M, et al. Substance use and quality of life over 12 months among buprenorphine maintenance-treated and methadone maintenance-treated heroin-addicted patients. *J Subst Abuse Treat*. 2007;33:91–98.
- ⁵² Metzger DS, Woody GE, McLellan AT, et al. Human immunodeficiency virus seroconversion among intravenous drug users in- and out-of-treatment: an 18-month prospective follow-up. *JAIDS*. 1993. 6(9): 1049–56.
- ⁵³ Sullivan LE, Moore BA, Chawarski MC, et al. Buprenorphine/naloxone treatment in primary care is associated with decreased human immunodeficiency virus risk behaviors. *J Subst Abuse Treat*. 2008. 35(1): p. 87–92.
- ⁵⁴ Fiellin DA, Weiss L, Botsko M, et al. Drug treatment outcomes among HIV-infected opioid-dependent patients receiving buprenorphine/naloxone. *JAIDS (Suppl)*. 2011; 56(1): S33–8.
- ⁵⁵ 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. *JAIDS (Suppl)*. 2011; 56(1): S22–32.
- ⁵⁶ Korthuis PT, Fiellin DA, Fu R, et al. Improving adherence to HIV quality of care indicators in persons with opioid dependence: the role of buprenorphine. *JAIDS (Suppl)*. 2011; 56(1): S83–90.
- ⁵⁷ Korthuis PT, Fiellin DA, Fu R, et al. Improved quality of life for opioid-dependent patients receiving buprenorphine treatment in HIV clinics. *JAIDS (Suppl)*. 2011; 56(1): S39–45.
- ⁵⁸ Thompson MA, Aberg JA, Hoy JF, et al. Antiretroviral treatment of adult HIV infection: 2012 recommendations of the International Antiviral Society-USA panel. *JAMA*. 2012; 308(4): 387–402.
- ⁵⁹ Jones CM, Campopiano M, Baldwin G, et al. National and State Treatment Need and Capacity for Opioid Agonist Medication-Assisted Treatment. *AJPH*. August 2015; 105:8.
- ⁶⁰ Cheever LW, Kresina TF, Cajina A, et al. A model Federal collaborative to increase patient access to buprenorphine treatment in HIV primary care. *JAIDS (Suppl)*. 2011;56(1):S3–S6.
- ⁶¹ Glanz K, Rimer BK, Viswanath K. *Health Behavior and Health Education: Theory, Research and Practice* (4th Edition). San Francisco, CA: Jossey-Bass; 2008. 26.
- ⁶² Rogers EM. New Product Adoption and Diffusion. *Journal of Consumer Research*. March 1976; 2: 290–301.
- ⁶³ Rogers EM. *Diffusion of Innovations* (4th edition). The Free Press: New York; 1995.
- ⁶⁴ Federal State Medical Boards. Model Policy on DATA 2000 and Treatment of Opioid Addiction in the Medical Office. April 2013. Available at: www.fsmb.org/Media/Default/PDF/FSMB/Advocacy/2013_model_policy_treatment_opioid_addiction.pdf
- ⁶⁵ American Society of Addiction Medicine. *The ASAM Standards of Care: For the Addiction Specialist Physician*. 2014. Available at: www.asam.org/docs/default-source/publications/standards-of-care-final-design-document.pdf.
- ⁶⁶ Kraus ML, Alford DP, Kotz MM, et al. Statement of the American Society of Addiction Medicine Consensus Panel on the Use of Buprenorphine in Office-Based Treatment of Opioid Addiction. *J Addict Med*. 2011; 5(4): 254–263.
- ⁶⁷ Clinical Tools, Inc. *Locating an Experience Buprenorphine Prescriber for Consultations*. Available: www.buppractice.com/node/11991.
- ⁶⁸ Providers' Clinical System. About the Mentoring Program. Available at: <http://pcssmat.org/mentoring/>.
- ⁶⁹ American Society of Addiction Medicine (ASAM). Definition of Addiction. Updated April 19, 2011. Available at: www.asam.org/for-the-public/definition-of-addiction.
- ⁷⁰ Schackman BR, Leff JA, Botsko M, et al. The cost of integrated HIV care and buprenorphine/naloxone treatment: results of a cross-site evaluation. *JAIDS (Suppl)*. 2011;56:S76–S82.
- ⁷¹ Weiss L, Netherland J, Egan JE, et al. Integration of buprenorphine/ naloxone treatment into HIV clinical care: lessons from the BHIVES collaborative. *JAIDS (Suppl)*. 2011;56(1):S68–S75.
- ⁷² Sullivan LE, Fiellin DA. Narrative review: buprenorphine for opioid-dependent patients in office practice. *Ann Intern Med*. 2008;148(9):662–70.