Using Buprenorphine for Outpatient Opioid Detoxification

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The Drug Addiction Treatment Act of 2000 (DATA 2000) was established to create a new paradigm for medication-assisted treatment of persons with opiate addiction in the United States. Before enactment of DATA 2000, the use of opioid medications to treat patients with opioid addiction was permissible only in federally approved treatment programs, ie, “methadone clinics.” The only medications permitted were Schedule II drugs (eg, methadone hydrochloride and 1-α-acetylmethadol [LAAM]), which could only be dispensed, not prescribed. Under provisions of DATA 2000, qualified physicians in a medical office and other appropriate settings outside the opioid treatment program system may prescribe and/or dispense Schedule III, IV, and V opioid medications for treating persons with opioid addiction if such medications have been specifically approved by the US Food and Drug Administration for that indication. Opioid addiction treatment programs were commonly known as methadone clinics. Such programs now may also dispense buprenorphine hydrochloride and the buprenorphine hydrochloride-naloxone combination.


In refreshing this article for on-line only publication, two illustrative case presentations of anecdotal patients have been added.


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In October 2002, the US Food and Drug Administration (FDA) approved two sublingual formulations of buprenorphine hydrochloride, a Schedule III opioid partial agonist, for treatment of opioid addiction. These medications, buprenorphine and buprenorphine and naloxone in combination are the first, and as of this publication, the only Schedule III, IV, or V medications to have received FDA approval for use under the Drug Addiction Treatment Act of 2000 (DATA 2000). The intent is that office-based treatment with buprenorphine will bring addiction care into the mainstream of medicine by greatly expanding access and providing hope to thousands of drug abusers.

Opioid addiction includes not only heroin-related problems, but also the increasingly recognized abuse of prescription pain medications such as hydrocodone, oxycodone hydrochloride, meperidine hydrochloride, and hydromorphone hydrochloride. Rates of addiction to these analgesics have been increasing rapidly. The incidence of emergency department visits related to prescription opioid pain medications more than doubled between 1994 and 2001. The prevalence of heroin addiction in the United States has also been increasing and currently is believed to be the highest it has been since the 1970s. According to the Office of National Drug Control Policy, an estimated 810,000 to 1 million individuals in the United States were addicted to heroin in the year 2000. During the past decade, opioid misuse and abuse of prescription pain killers increased at a higher rate (140.5%) than for marijuana, cocaine, methamphetamine, or heroin; 32.7 million Americans have reported nonmedical use of opioid pain medications at least one time.

On January 5, 2007, the DATA 2000 was amended to allow physicians currently authorized for 1 year to resubmit a notification of intent to treat 100 patients. This effectively changed the limit from 30 to 100 patients per physician. The notification is reviewed by the Substance Abuse and Mental Health Services Administration/Center for Substance Abuse Treatment (SAMHSA/CSAT), and the physicians are notified of approval of their change in patient

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limits. The process is expedited by SAMHSA by providing a prefilled form on their Web site. The new law is Public Law 109-469.

Other advances in treatment include the National Alliance of Advocates for Buprenorphine Treatment, which has a Web site (www.naaAt.org) that provides Patient Education, Find a Physician, Info for Providers, Discussion Board, and Patient-Physician Matching Services. This Web site has been of value to physicians starting a buprenorphine practice.

The Physicians Clinical Support Service (PCSS) has also been implemented to provide physicians with immediate coaching during their first clinical experiences with office-based opioid therapy (OBOT). The PCSS Web site is www.pcssmentor.org.

There have been clinical observations that treatment with the buprenorphine-naloxone combination in the office setting has been more effective for the prescription opiate addicts than for the heroin addicts. These reports should be considered anecdotal at present until scientific evaluation has been completed. Heroin addicts have had limited access to buprenorphine under the DATA 2000 because the financial considerations initially were prohibitive. This situation has improved as many state Medicaid programs (Title XIX) now cover this medication. Previously, OBOT for heroin addicts was provided primarily in the methadone clinics which required the same restrictions for them as for those patients who were receiving methadone hydrochloride.

It is apparent that heroin addicts do need more and closer supervision and monitoring than prescription drug addicts. Overall, the introduction of the buprenorphine-naloxone combination has been a great advance in the therapy for opioid addiction. Several sites are also researching buprenorphine administration for treatment of chronic pain.

**Opioid Treatment Programs**

Opioid treatment programs (OTPs), methadone maintenance programs that embrace interventions such as counseling services, vocational resources, referrals, and appropriate drug monitoring, have been shown to reduce opioid use and related crime, increase employment, and decrease the incidence of human immunodeficiency virus (HIV) infection related to needle sharing. In addition, abusers enrolled in such programs gain improved physical and mental health, and decreased overall mortality from opioid addiction. Unfortunately, despite these results, the capacity of the methadone maintenance treatment system has not kept pace with the rise in opioid addiction.

**Buprenorphine as Option in Treatment Programs for Opioid Addiction**

Buprenorphine was identified as a viable option for maintenance treatment of individuals addicted to opioids more than 20 years ago. Research during the past two decades has documented the safety and effectiveness of buprenorphine for this indication, and the enactment of DATA 2000 has now enabled physicians in the United States to offer specifically improved forms of buprenorphine for treating patients with opioid addiction. In this regard, it was recently reported that buprenorphine and methadone had similar safety and side effect profiles, and there was no evidence that buprenorphine was selectively associated with abnormal liver function compared with methadone.

Buprenorphine has unique pharmacologic properties that make it an effective and well-tolerated addition to available pharmacologic treatment modalities for addiction. Repeated administration of drugs that activate opiate receptors (opioid agonists, eg, morphine, heroin [diacetylmorphine], and methadone) produces physical dependence and tolerance. Physical dependence is manifested as a characteristic set of withdrawal signs and symptoms that emerge upon reduction or complete cessation of using a drug.

Addiction is a behavioral syndrome characterized by repeated compulsive seeking or use of a substance despite adverse social, psychological, or physical consequences either singly or in combination. Opioid addiction often, but not always, is accompanied by tolerance, physical dependence, and opioid withdrawal syndromes (Table). Drugs that bind to, but do not activate, opioid receptors are opioid antagonists (eg, naltrexone and naloxone). Opioid partial agonists are drugs that activate receptors, but to a lesser degree than full agonists. Increasing the dose of a partial agonist does not produce as strong an effect as does increasing that of a full agonist. Pharmacologic effects (including respiratory depression) of a partial agonist reach a ceiling at moderate doses and do not increase significantly from that point, even with higher doses.

The partial agonist properties of buprenorphine make it a safe and effective option for treatment of patients for opioid addiction. Buprenorphine has sufficient agonist properties such that when it is administered to individuals who are not opioid dependent but are familiar with the effects of opioids, they experience subjectively positive opioid effects. These subjective effects aid in maintaining compliance with buprenorphine dosing in patients who are opioid dependent. Buprenorphine also occupies opioid receptors with strong affinity and thus blocks opioid full agonists from exerting effects. Buprenorphine dissociates from opioid receptors at a slow rate, thereby allowing it to be synthesized each day. Although buprenorphine can be misused (consistent with agonist action at opioid receptors), its abuse potential is lower in comparison with a full opioid agonist. A new formulation containing buprenorphine in combination with naloxone has been developed to decrease the potential for abuse via the injection route. Physicians who prescribe or dispense buprenorphine or the buprenorphine and naloxone combination should monitor for diversion. Because of the potential for serious drug-drug interaction, buprenorphine must be used with caution with certain other types of medications, particularly benzodiazepines, other sedative drugs, opioid agonists and antagonists, and drugs metabolized by cytochrome P450 3A4.

**Medical Management of Opioid Addiction**

The necessary first steps of the medical management of opioid addiction are:
Distinctions Between Patients With Pain Who Are Being Treated With Opioids and Patients Who Are Addicted to Opioids

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Patients With Pain</th>
<th>Patients Who Are Addicted to Opioids</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compulsive drug use</td>
<td>Rare</td>
<td>Common</td>
</tr>
<tr>
<td>Crave drug (when not in pain)</td>
<td>Rare</td>
<td>Common</td>
</tr>
<tr>
<td>Obtain or purchase drugs from nonmedical sources</td>
<td>Rare</td>
<td>Common</td>
</tr>
<tr>
<td>Procure drugs through illegal activities</td>
<td>Absent</td>
<td>Common</td>
</tr>
<tr>
<td>Escalate opioid dose without medical instruction</td>
<td>Rare</td>
<td>Common</td>
</tr>
<tr>
<td>Supplement with other opioid agent</td>
<td>Unusual</td>
<td>Frequent</td>
</tr>
<tr>
<td>Can stop use when effective alternate treatment modalities are available</td>
<td>Usually</td>
<td>Usually not</td>
</tr>
<tr>
<td>Prefer specific routes of administration</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Can regulate use according to supply</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>


Use of validated screening tools for identifying patients who may be abusing these drugs, and further assessment to clearly delineate the scope of the disorder. When treatment is indicated, consideration must be given to the appropriate type, setting, and level of intensity based on patient preferences, addiction history, presence of medical or psychiatric comorbidities, and readiness to change. Buprenorphine is a treatment option for many such patients. Screening instruments are available for establishing substance abuse and related problems. It is recommended that physicians evaluate all patients for such problems.

Screening for Addiction

Available validated instruments include the drug abuse screening tests, CAGE questionnaire (focuses on “Cutting down, Annoyance by criticism, Guilty feeling, and Eye-openers”),9 CAGE-Aid (CAGE questions adapted to include drugs), Tweak questionnaire, and Audit Michigan Alcoholism Screening Test. They can be found in numerous SAMHSA publications.10

If screening indicates the presence of an opioid use disorder, further assessment is indicated to thoroughly delineate the patient’s problem, identify comorbid or complicating medical or emotional problems, and determine appropriate setting and level of treatment. Complete assessment may require several office visits, but initial treatment should not be delayed. It is recommended that initial and on-going drug screening be done to detect or confirm recent use of drugs such as alcohol, benzodiazepines, and barbiturates, which could complicate management of a patient’s addiction. Urine screening is the most commonly used and generally most cost-effective testing method to identify opioid use, but it is not a scientifically valid method to establish impairment.

Diagnosis of Opioid Dependence and Patient Selection

After a thorough assessment has been conducted, a formal diagnosis can be made. As a general rule to be considered for buprenorphine maintenance therapy, patients should have a diagnosis of opioid dependence as defined by the Desk Reference to the Diagnostic Criteria From DSM-IV-TR.11 This diagnosis is based not merely on physical dependence on opioids, which many patients exhibit (eg, those suffering from cancer), but also on an addiction process (ie, compulsive use despite harm).

It is important to determine during evaluation if the patient is appropriately motivated and to rule out contraindicating medical and psychiatric comorbidities. Buprenorphine may be an appropriate option for patients who:

- are interested in treatment for opioid addiction;
- have no contraindication to buprenorphine therapy;
- are expected to be reasonably compliant with such treatment;
- understand the benefits and risks of buprenorphine administration;
- are willing to follow safety precautions for buprenorphine therapy; and
- agree to buprenorphine administration after review of other options.

Patients who are less likely to be appropriate candidates for buprenorphine treatment in an office-based setting are those whose circumstances or conditions include:

- comorbid dependence on high doses of benzodiazepines or other central nervous system depressants (including alcohol);
- significant psychiatric comorbidity;
- active or chronic suicidal or homicidal ideation or intents;
- multiple previous treatments for drug abuse with frequent relapses (except when previous detoxification followed by relapse are strong indication for long-term maintenance);
- poor response to previous treatment with buprenorphine; and
- significant medical complications.

Treatment Protocols

Protocols for treatment with buprenorphine for opioid addiction consist of three phases: induction, stabilization, and maintenance (Figure).

Induction involves helping patients begin the process of switching from the
opoid of abuse to buprenorphine. The goal is to find the minimum dose of buprenorphine at which the patient discontinues or markedly diminishes use of opioids and has no withdrawal symptoms, minimal or no side effects, and no craving for the drug of abuse. It is recommended that the buprenorphine-naloxone combination be used for the induction, stabilization, and maintenance for most patients and that initial induction doses be administered as observed treatment with further doses provided by prescription, ie, one or two times a week initially, then once at week 2, then once every 3 to 4 weeks.

To minimize chances of precipitating withdrawal, patients who are transitioning from long-acting opioids (eg, methadone, sustained-release morphine, or sustained-release oxycodone) to buprenorphine should undergo induction using buprenorphine monotherapy, but after 3 days be switched to the buprenorphine-naloxone combination. Because of the potential for naloxone to precipitate withdrawal in both mother and fetus, pregnant women who are deemed to be appropriate candidates for buprenorphine undergo induction and maintenance solely on this drug.

Stabilization is begun when a patient is having no withdrawal symptoms, minimal or no side effects, and no longer has uncontrolled cravings for opioid agonists. Dosage adjustments may be necessary during early stabilization, and frequent contact with the patient increases the likelihood of compliance: four or five times a month the first month, then once every 2 weeks thereafter. The longer period during which the patient is on buprenorphine therapy is the maintenance phase; it may be indefinite. During this time, attention must be focused on social and family issues that have been identified during the course of treatment as contributing to a patient’s addiction.

Medically Supervised Withdrawal or Detoxification

Buprenorphine can be used for medically supervised withdrawal of patients from both self-administered opioids and from prescribed methadone treatment. The goal is to provide a transition from physical dependence on opioids to a drug-free state while minimizing withdrawal symptoms and avoiding side effects.

Medically supervised withdrawal with buprenorphine consists of an induction phase and a dose-reduction phase. Using buprenorphine to taper off long-acting opiates should be considered only for those patients who have evidence of sustained medical and psychosocial stability, and should be undertaken in conjunction and coordination with those patients’ OTPs.

Nonpharmacologic Therapy

Pharmacologic therapy alone is rarely sufficient treatment for drug addiction. For most patients, drug-abuse counseling (individual or group) and participation in self-help programs are necessary components of comprehensive addiction care. As part of the training for treatment of patients with opioid addiction, physicians should obtain knowledge about basic principles of brief intervention in case of relapse.

Physicians who decide to care for opioid addicts should ensure that they are capable of providing psychosocial services, either in their own practices or through referral to reputable behavioral health practitioners in their community. In fact, DATA 2000 stipulates that when physicians submit notification to
should determine if any patient factors
interact with legal system inquiries and
document the patient’s compliance to
parole or probation officers, and to
buprenorphine monitoring activities are required.

During stabilization, patients receiving maintenance treatment should be seen on at least a weekly basis. Once a stable buprenorphine dose is reached and toxicologic screens (eg, the enzyme multiplied immunoassay test [EMIT]) are free of illicit opioids, amphetamines, benzodiazepines, methamphetamine, marijuana, and PCP (phencyclidine), physicians may determine that less-frequent visits are acceptable. During opioid addiction treatment with buprenorphine, such toxicology tests should be administered at least monthly.

Buprenorphine is a drug that will lend itself to special populations (eg, adolescents with opioid addiction). Treatment of these patients for such abuse is complicated by a number of medical, legal, and ethical considerations. Physicians intending to care for adolescents should be thoroughly familiar with the laws in their state regarding parental consent. Physicians who do not specialize in treatment of opioid abuse should strongly consider referring adolescent patients to an addiction specialist. Additionally, state child protection agencies can be a valuable resource when determining the proper disposition for these young patients.

Another population in which buprenorphine has been valuable is those recently discharged from controlled environments such as prison and residential living programs. Intensive buprenorphine monitoring activities are required. Treating physicians may be called on to verify and explain therapeutic regimens to parole or probation officers, and to document the patient’s compliance to interact with legal system inquiries and others when the court mandates treatment. If an OTP is available, physicians should determine if any patient factors preclude referral. For patients to qualify to receive methadone treatment for addiction, they must have a urine drug screen positive for opiate in addition to meeting other admission criteria, which also consider other factors including signs of dependence such as tracts, abscesses, physical decay, flat and/or blanched nasal mucous membranes, and elevated liver function test results.

**Required Qualifications and Training**

To practice office-based treatment of patients with opiate addiction under the auspices of DATA 2000, physicians must first obtain a waiver from the special registration requirements established in the Narcotic Treatment Act of 1974 and its enabling regulations. To obtain a DATA 2000 waiver, physicians submit notification to SAMHSA of their intent to begin dispensing and/or prescribing this treatment.

A Notification of Intent form must contain information on the physician’s qualifying credentials, as well as additional certifications including a statement that the physician (or physician’s group practice) will not treat more than 30 patients for addiction during the first year of waiver but may increase to 100 patients thereafter. Notification of Intent forms can be filled out and submitted online at the SAMHSA buprenorphine Web site. Alternatively, this form can be printed from the site and submitted via ground mail or fax.

To qualify for a DATA 2000 waiver, physicians must have completed at least 8 hours of approved training in treating patients with opioid addiction, or have certain other qualifications as defined in the legislation (eg, clinical research experience with certification in addiction medicine; statement that they can provide patients with necessary concurrent psychosocial services). The consensus panel recommends that all physicians who plan to practice opioid addiction treatment with buprenorphine attend a DATA 2000 qualifying 8-hour training program on buprenorphine.

Before embarking on the provision of office-based addiction treatment services, practices that will be new to this form of care should undertake certain preparations to ensure the highest quality experience for patients, providers, and staff. Providers and practice staff should have an appropriate level of training, experience, and comfort with opioid addiction treatment. Linkages with other medical and mental health professionals should be established to ensure continuity of treatment and the availability of comprehensive community-based psychosocial services.

**Maintaining Privacy and Confidentiality**

The privacy and confidentiality of individually identifiable drug or alcohol treatment information is protected by SAMHSA confidentiality regulation (Title 42 Part 2 of the code of Federal Regulations [42CFR Part 2]). This regulation mandates that addiction treatment information in the possession of the substance abuse treatment providers be handled with a greater degree of confidentiality than general medical information.

Among other stipulations, 42CFR Part 2 requires that physicians providing opioid addiction treatment obtain signed patient consent before disclosing such individually identifiable information to any third party. This requirement extends to activity such as telephoning or faxing addiction treatment prescriptions to pharmacies, as this information constitutes disclosure of the patient’s opioid abuse therapy.

In May 2003, the Federal Opioid Treatment Program Regulations were amended to add buprenorphine and buprenorphine-naloxone to the list of approved opioid medications that may be used in federally certified and registered OTPs, ie, methadone clinics. Any OTP physicians who decide to administer these two agents must adhere to the same federal treatment standards established for all medications under 42CFR Part 8.

The following case presentations describe anecdotal patients who typify the population seeking buprenorphine treatment for addiction.

**Illustrative Case Scenarios**

**Case Presentation 1**

Georgia, a 24-year-old college student, started experimenting with oral dosage forms of opioids (oxycodone and hydrocodone). She began...
using these medications when her boyfriend introduced her to mixing them with alcohol. After 3 months, she noticed that she needed larger doses to achieve her high. When Georgia tried to stop using them after breaking up with her boyfriend, muscle spasms in her back, sweating, irritability, diarrhea, and nausea subsequently developed. Having looked up such symptoms on the Internet, she knew they are occurring as the result of opioid withdrawal. Georgia feels great emotional stress from the withdrawal symptoms and has remorse for her addiction. She therefore seeks treatment from her physician.

Case Presentation 2
Andrew, a 45-year-old male executive, is in a high-stress position; he often relaxes by taking combination opioid products (hydrocodone with acetaminophen or oxycodone with acetaminophen). The recent month has been especially tumultuous as the company for which he works has financial problems. Consequently, Andrew has been increasing his abuse to more than 30 tablets per day. Finding that a friend could sell him Mexican Black Tar heroin for less than the opioid tablets cost on the street, he began to smoke it and felt the stress quickly lessened its grip on his life. Within 2 weeks, he admits to smoking more than 2 g of heroin per day. He is seen in his physician’s office asking for help with his “problem.”

Discussion
Both of these patients meet the criteria for opioid dependence. They have demonstrated loss of control, craving, and compulsion to use opioids despite negative consequences and the presence of withdrawal. Both patients have realized that they need assistance and have consulted their personal physician for evaluation and care. They are at the action stage of motivational interviewing.

Their physicians are eligible to treat these patients with buprenorphine-naloxone only if they have received a waiver from the DEA and have a unique DEA identification beginning with the letter “X” (X DEA registration). The DATA 2000 DEA waiver is available to any licensed physician who has an active unrestricted DEA license and who has completed the 8-hour OBOT course.

Comment
Buprenorphine, available alone or in combination with naloxone as sublingual tablets, provides a feasible alternative to treatment of patients with opioid addiction in the outpatient setting. It is a safe and convenient drug that can be provided on a prescription basis for patients who meet treatment criteria. Buprenorphine is a viable pharmacologic tool in the therapy for addiction because it provides a level of comfort to patients without euphoric effects. It also blocks the effect of other opioids. The office practice with buprenorphine, when used according to guidelines with monitoring and available psychosocial support, should permit many people who have either willingly or unwillingly become dependent on opioids to gain freedom from this addiction and maintain a normal and viable lifestyle.

References

Bibliography